JUN 2 1920

Registered at the G.P.O., Sydney, for Transmission by Post as a Newspaper. Published Weekly.

THE

MEDICAL JOURNAL OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. I.—7TH YEAR—NO. 16. SYDNEY: SATURDAY, APRIL 17, 1920. PRICE 6D.

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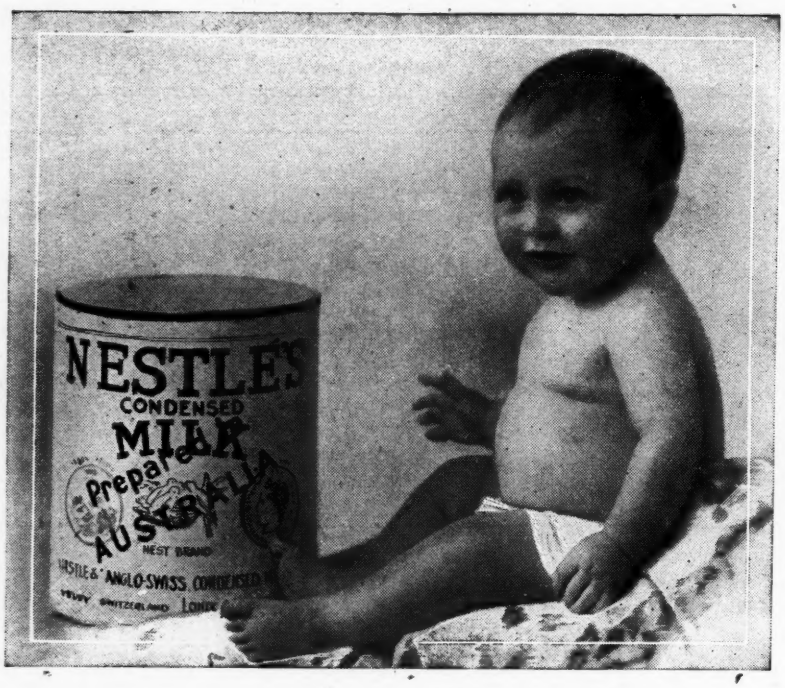

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NOTES ON APPLIED PSYCHOLOGY AND SUGGESTIVE THERAPEUTICS.[1]

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Till recently psychology has been neglected by the medical profession. The older form, based on introspection, was barren of practical results, whilst the newer was left severely alone, because the methods were considered unorthodox, such as hypnotism and psycho-analysis. However, if we study the history of our science we find that there has usually been resistance to our greatest discoveries. Thought, like the gyroscope, does not, in many people, change its line of action easily. Thus anæsthetics, antiseptics, the stethoscope, etc., at first met fierce opposition and ridicule. In the case of hypnotism the results seemed so unlikely to those who had never studied the brain from a psychological aspect, that they were dismissed as either conscious frauds, or else it was considered that the doctor and patient were the victims of a delusion. There were, however, several other factors which helped to retard the progress of this science. The first man to bring hypnotism before the public was a Viennese physician named Mesmer. As, however, he did not understand the art he used, it was only to be expected that there was a lot of charlatanism mixed with his performances. His medical judges, partly from bias, but chiefly from want of knowledge in psychology, saw only the false and missed what was true. Consequently, for a long time afterwards it was impossible to get an unbiassed tribunal to pass judgement on any further experiments along such lines.

However, Braid, in England, and M. Liébault, in France, put the study on a scientific basis. It had a setback by Charcot, who, though a great neurologist, made grievous errors in his study of the phenomena. By getting a few hysterics together, he produced a condition allied to hypnotism. He, therefore, argued that hypnotism was a hysterical neurosis. He quite overlooked, or perhaps did not know, the fact that probably 98% of the human race can be hypnotized, the insane excepted.

However, I will return to this later on, when I compare and contrast hysteria with hypnosis.

Psychologically, the brain consists of at least two parts—the conscious and sub-conscious. It is upon the latter that the hypnotist chiefly operates and about its action that he learns. The basis of hypnotism is suggestion, no matter whether sleep accompanies the operation or not. In our normal state we are all more or less suggestible. Thus, if we suddenly say to a person in a quick, authoritative manner: "Close your eyes," the action will be carried out, as a rule, by his sub-conscious mind before any logic has been brought to bear on the matter. In hypnosis, advantage is taken of the fact that successive suggestions, aided perhaps by fixation of the attention by means of passes, etc., can increase the normal plasticity of the brain; in this way suggestions are able to reach the sub-conscious mind, which otherwise would have been held up in the conscious one.

I will first give a description of the sub-conscious mind as I have studied it in upwards of 1,000 sittings of hypnosis.

There is evidence constantly increasing that part of the brain of man acts when he is ordinarily not aware of such action. This portion of the brain has been called the sub-conscious mind. The brain might be compared to the spectrum, for just as there are vibrations above the violet and below the red, so there are parts of the brain which are not ordinarily known to us, because their actions do not enter our ordinary consciousness. Nevertheless, they can be studied by special means.

We used to speak of voluntary and involuntary action and how some actions could be either; but the idea that mind (that is to say, logical thought, memory, emotion, etc.) could exist outside our ordinary consciousness was not deemed possible.

Even without the aid of hypnosis, if we consider the action of some of the so-called involuntary muscles, we find the evidence of mind behind them. The rather elastic term reflex action does not seem to cover all that happens.

Take, for example, the movement of the omentum in the abdomen to any part where its presence is needed and the way it will set about to shut off the lesion. In an appendicitis the so-called symptoms, *i.e.*, the rigidity of the involuntary muscles of the abdominal wall, the paralysis of the involuntary muscles of the bowel and the flexion of the leg might all be looked upon as actions of the brain outside our consciousness, since they are all directed towards resting the disease in the best possible manner. In other words, if we need mind to guide our voluntary actions in relationship to the external world, is it not probable that mind must also preside over the functions of the body? The two minds are connected, but work best when they are not too much interfering with each other.

Thus introspection, which is the abnormal inquiry of the conscious into the unconscious, is well known to be injurious, as illustrated by hypochondria. If a man keeps worrying about his heart's action, it is not unusual to get functional derangement. On the other hand, in the case of hysteria we have auto-suggestions, which are thoughts of the unconscious mind giving rise to various phenomena, such as contractures and paralyses of the voluntary muscles, which normally should take their orders only from the conscious mind.

Some actions may be either voluntary or automatic. A man wills himself to walk and usually continues to do so without further conscious effort. He may cease to think about the walking and occupy his mind about other things, say a mathematical problem. Now, not only does he continue to walk, but his eyes continue to serve him and guide him through the traffic.

[1] Read at a Meeting of the South Australian Branch of the British Medical Association on February 26, 1920.

The impulses from the optic nerve are not taken to the ordinary consciousness; in fact, he may be completely unaware of many incidents. In colloquial language, we would say he was absent-minded. The walking could be called automatic, because this would include far more than mere reflex action. It depends on a driving mind, but probably not one of such intellectuality as the higher centres.

The actions of the sub-conscious mind, as already described, are therefore:—

(1) To preside over the involuntary actions of the body in health and disease.
(2) To take over such involuntary actions which have become a habit, *i.e.*, walking, playing the piano, etc..

If it were not for this we would have no leisure and every action, no matter how often repeated, would always require conscious effort.

As actions are learnt they are passed down to the sub-conscious, thus leaving the higher centres free to conquer "fresh fields and pastures new."

There is evidence, however, that, in addition to this, not only are learnt actions stored there, but also thoughts and ideas, not merely as memories alone, but as active principles associated with a certain kind of logic and emotions. A person will often have an unreasoning dislike for a certain object, say a particular food. Often one can show that it was due to some sickness caused by it on a previous occasion, yet the person is not conscious of it in the upper mind. The sub-conscious mind, however, recognizes it and objects. One can verify this in hypnosis when one speaks direct to the sub-conscious; forgotten memories can be resurrected, explaining the action. This I will describe later. Of course, some cases occur where smell, etc., will bring back memory to the conscious mind. In such a case the conscious mind acts also.

One interesting case is quoted of an epileptic girl, who had fits every few months, as long as she could remember. She could not know what caused them. In her waking condition she was given a number of words to get her associations. Amongst them was the word "white." The associated word in her waking state was indifferent. such as "snow." Under hypnosis she always gave "ghost." Asked why, she was able to tell the following: When a little child of two or three years old, somebody dressed up as a ghost and came into her room one night. The child, being extremely terrorized, went into convulsions. A doctor had to be called in and chloroform administered to quieten her. She woke with amnesia, but ever afterwards she was subject to fits when something suggested the scene to her unconscious mind.

It is these complexes, as they are called, dissociated from consciousness, which give rise to many mental disorders. On synthesis with consciousness they cease to be detrimental; such was the case with this patient when her waking memory was also revived for the past.

It is probable that many cases of hysteria are brought about by shock fixing an imperative idea in the sub-conscious mind. These ideas have associated emotions, so that the person cries or laughs, without being conscious why he does so. Or a movement, contracture or paralysis, localized or general, may be the result of this unconscious thought. The sub-conscious mind is the home of auto-sugggestions, which give rise to hysteria when the higher centres have been paralysed to a greater or less extent and to dreams when they are resting in ordinary sleep.

In hypnotism the automatic mind does not, as a rule, have auto-suggestions, but is directed by outside ones, which have put the higher centres to sleep or have fixed them.

Occasionally auto-suggestion will arise during or after hypnosis; these may alter or neutralize its effects, unless recognized and eradicated at once.

An interesting question is: What is the degree of spontaneous intelligence in the lower brain? We know that a problem in mathematics has been worked out by somnambulists, whether natural or hypnotized; in fact, one of mine did it quicker in the latter condition than when he was awake. There are two possible explanations; one that the working of a large portion of mathematics has, after much practice, been passed on to the lower brain. It might work along these lines more or less automatically. Or, on the other hand, the higher centre of the brain, more especially associated with mathematics, did not sleep like the ordinary consciousness, but worked in conjunction with the sub-conscious. One thing is certain, that ordinary consciousness in such cases takes no part.

In studying sleep, the first thing we notice is a rise of subjectiveness (as we get in hypochrondia) and a diminution of objectiveness.

Emotions are intensified; for example, fear, such as the thought of death will induce, may become very intense as a person is passing from the waking stage to sleep. Thoughts at this time, as I will show later on, are very likely to be seized upon by the sub-conscious and visualized as dreams during sleep.

Dreams are sub-conscious ideas, starting, perhaps, spontaneously, but probably more often from some peripheral (including organs) stimulus. This gives a suggestion and an idea is formed. By association of ideas, similar ideas are formed out of the memory of the sub-conscious and so a scene is enacted. The material of these dreams is nearly always taken from the memory of events long passed, or else from the thoughts that are associated with events just happened. It is unusual for a thought to be selected from the ordinary memory. Hence, we dream of things we did that day or dreams associated with them, or else events of long ago. Rarely do we dream of an event a week old. Judgement, however, is absent, so they lack co-ordination and are extravagant and impossible without appearing so.

Now, in hypnotism we have a means of checking much of this theory. Here the hypnotist guides the ideas, which are, however, often modified by association. When I suggest a rose to a patient, he will often add thorns, etc., to the suggestion. There is a reverse hallucination to this, *i.e.*, if patient is lying on a soft mattress and I suggest a pin-cushion, he not only feels the pins, but does not feel the mattress. In insanity this is often noticed.

I will now briefly compare the three states: sleep, hypnotism and hysteria. In all three subjectiveness increases and objectiveness decreases. In all three suggestion acts. In sleep we go to bed at night, close

our eyes, relax our limbs, expect to go to sleep, etc., If any of the above suggestive actions are altered, we may get insomnia.

In hypnotism the voice of the operator supplies the suggestions, while the attention is fixed.

In hysteria the sub-conscious idea which controls the person, is often augmented by physical disability or verbal conversation of friends, etc..

In sleep a person is *en rapport* with himself and partially with the external world. It is not difficult for many people to awake at a certain hour, whilst a sudden loud noise will awaken everybody.

In hypnotism the subject is *en rapport* (*i.e.*, can converse) with the operator and hears only his voice. Other sounds are usually not noticed by consciousness, though registered. They will usually not awake a person, especially if ordered not to.

In hysteria the person is *en rapport* with one or more auto-suggestions from his sub-consciousness. Any phenomena may be induced, as in the case of hypnotism.

In all three there are dreams. In the latter two (hypnotism and hysteria) they are more often acted. Yet people will groan and kick during ordinary sleep and even becomes spontaneous somnambulists.

In hysteria the auto-suggestion is more often localized so that the person is usually not asleep, but in a suggestible state.

In sleep a person may be made have special dreams by various suggestive stimuli applied to the body.

Natural sleep, hypnosis and hysteria can all become interchangeable. I have put a sleeping person into the hypnotic state without waking and I have seen hysteria tacked on to hypnosis, etc.. We may look on natural sleep as a person lying quietly, etc., a hypnotized person as one ready to act on suggestion and a hysteric as awake but with some motor or sensory disability.

A hypnotized person may pass into natural sleep or become hysterical by auto-suggestion, while on the other hand a hysteria ceases for the time when normal sleep comes, so that any spasm present subsides.

Hysteria is a functional neurosis which occurs in people with unstable emotional brains and is, as we well know, mostly in women.

Hypnotism is an increase of the natural suggestibility of human beings. It is as easy to produce in men as in women. Practically everybody can be hypnotized, if we get the right key to their personality. We then exercise the sub-conscious brain and make it dream. But it is as incorrect to call this a neurosis as to call a person who dreamt in ordinary sleep, diseased. Hypnosis is more closely related to ordinary sleep than to hysteria. A person may have a hypnotic sleep every night for years and in certain conditions improve in health, showing that it can take the place of ordinary sleep.

During the recent influenza epidemic, I have used hypnotic sleep very effectively, instead of using depressing drugs on an already weakened heart. A hypnotized person wills himself to be directed by the hypnotizer, but a hysterical person does not will, for this will is lowered by emotion (shock) and it is subjected to auto-suggestion, so that he does not concentrate his mind like the hypnotized.

The sub-consciousness apparently never rests, as it works day and night; probably, however, it rests by rhythm, that is to say, just as the heart rests during diastole. As a matter of fact, ordinary sleep is a diurnal rhythm.

I will now quote a few cases from my own practice, to illustrate the light hypnosis throws on the working of the mind and how benefits, in suitable cases, may be conferred on the patient.

Case I.—One of the earliest cases was that of a child, aged four years, who could not go to sleep that night. Of course, it had no knowledge of hypnotism. I closed the eyes for a minute and told her she was going to sleep. This was done. The next night I saw the child. She said it was a nice easy way to go to sleep and would I do it again. However, I did not consider this necessary, so I did not repeat it. Here the phenomenon was very closely allied to natural sleep, waking occurring at usual hour in the morning and spontaneously.

Case II.—Male, aged 15. He was a spontaneous somnambulist. He was seated in a chair and made to look backward in a strained position for the eyes at a bright light. The eyes did not close on suggestion, but the peculiar fixing of the ocular and facial muscles, which is characteristic of hypnosis, was visible. On elevation of the arm catalepsy was obtained. He also was unable to write the first letter of his name when suggested that he could not. At a second sitting taste was affected in the usual manner, *i.e.*, plain water would taste salt, sweet or bitter, by suggestion. Sight was not affected till the next sitting. Post-hypnotic phenomena were well marked. A suggestion was given, to be carried out a quarter of an hour after waking as follows. He was to take a book from a bookcase, lay it in front of me and to think he did it of his own conscious will. The result was as described. The peculiarities of this case were several. Thus, when first suggesting the hallucination of a rose, he said he saw something red in colour, but of indefinite shape, which faded and could not be made to come back at this sitting. At the next sitting the rose was seen and described in detail with supplementary (associated) hallucinations of thorns, which had not been suggested. Once I suggested a canary at a subsequent sitting, but he could not see it, but on suggesting an opossum this was at once seen. He had a pet opossum, but no canary, consequently, memory picture in the latter was not so distinct.

Compare sleep, how we dream of recent events. A hypnotized person calls largely on memory pictures when either an hallucination of sight is suggested or a character is acted.

Analgesia was not very marked, as he could partially feel a pin prick in the forearm. Later complete analgesia for this was obtained. A needle under the finger-nail usually caused flinching, though probably by careful suggestions and training this might also be rendered anæsthetic. It was suggested to him that he should never again walk in his sleep and as far as I know he has not done so since. A post-hypnotic suggestion was given that, that next morning at 10 o'clock he was to go to a drawer in the kitchen and take out three forks. He was then to

give one to the housemaid, one to the cook and place one on the table. Next morning he was watched by me without knowing it. Several times he came in and looked at the clock, without knowing why he did so. He was ready in the kitchen at 5 minutes to 10. As the clock struck, he put his hand to his head, as if trying to recollect something. He then carried out the order. On being asked by the cook why he had handed her the forks, he ingeniously said they had not been properly washed. The cook indignantly said she was convinced he was asleep.

This case seems to show that the patient's sub-conscious mind was thinking about the order. It is analagous to persons willing themselves to wake at a certain hour, just as they are dropping off to sleep. Forel does not hold this view, but considers that mere association when the time comes starts the mechanism. However, he advances no proof; I think my observation on this case shortly before the post-hypnotic was carried out show preparatory unconscious thought.

In acting on the emotions the same external actions which usually accompany these emotions, are performed. This subject, when made angry, either naturally or by hypnotic suggestion, would rub his head. In making an "invisible" person speak suddenly to him, I noticed he would at first give a slight shake of the head. A superficial observer, who knew nothing of suggestion, would perhaps conclude this was malingering. This is not the case, as the blindness and deafness was psychical, not actual, *i.e.*, the words were heard, but were instantaneously thrust out of consciousness. On being told not to do this and having practised, he would give no sign, though I feel sure if a new way of surprising his mind could be devised, it would respond, as is done when hysteria, in which the brain is being held in subjection by auto-suggestion, is cured. In the same way I have known patients to smile when the so-called "invisible" person speaks to them, though they would not answer them.

As regards the amnesia, though this is the natural sequence of somnambulism, it can always be removed by suggestion, either during the hypnosis or afterwards by affirmation. Conversely, if memory persists or is brought back, it can be abolished or rather thrust out of consciousness by affirmation. A hand laid on the forehead is of use only as an adjuvant to the hypnotist's commands. Memory and amnesia can be alternated as often and as rapidly as the hypnotist can speak.

In many of the phenomena of hypnosis it is what the patient thinks you want which counts. If you say to an awakened somnambulist: "Can you remember?" he may assume you wish him to do so. In giving a post-hypnotic suggestion to some somnambulists, I have noticed that the amnesia did not persist, even though the action was carried out. Probably they had not understood that they were not to remember, as the consciousness was concentrated on the details of the command. On re-hypnotizing them, I would explain how they had gone wrong and ask them to try again. This time there would be success. They would often apologize for the mistake and say they were ready. This points to the fact that it is doubtful if the somnambulist is often, if ever, a pure automaton, since he consents and wills an action.

The question arises here how far hypnotism might be abused for criminal purposes. It is difficult to speak authoritatively without carrying such an action to a conclusion, because one could not be absolutely sure that at the last moment the subject might not awaken or refuse compliance.

The experiments which I did carry out, however, pointed to the following: If a person is inclined to an evil act, this inclination could be easily increased, but a good conscience will nearly always protect a person under hypnosis.

There are, however, other important factors, *i.e.*, the suggestibility of the subject and his confidence in the hypnotist, the skill with which the suggestions are superimposed on each other, etc., so that judgement may be tricked. In many cases the subject has a vague idea that what he is asked to do is but an experiment and not a real crime. Therefore, there is a certain degree of judgement and conscience, which allows a subject to act, but not to perform a crime. As I have said, it is possible a crime might be committed, or the moral sense may be low from the start. On the other hand, we must remember that persuasion in the waking stage is every day sufficient to cause the morally weak to fall. There is a possibility of memory spontaneously returning, or being revived by another hypnotism, so that an evil hypnotist would be sheltering himself behind a very frail protection. A person is far more helpless under chloroform, which is constantly given. In either cases a hypnotist or an anæsthetist is exposed to the danger of unjust accusation from auto-suggestion of the subject, hence the desirability of a reliable witness in the case of female subjects.

Case III.—Mrs. U., aged 34. This patient had suffered from asthma practically all her life. It was especially bad at her home in Gumeracha. For nine months she had been living in Adelaide, as she did not dare return to her home. I advised her husband to bring her back. She entered my surgery with wheezing and dyspnœa. She was hypnotized into somnambulism in a few minutes and by suggestion the breathing became perfectly normal, while no wheezing could be heard, as previously, with the stethoscope. She was given a post-hypnotic suggestion to sleep soundly all night without an attack. This was partially successful, as at about 2 a.m. she had a very slight attack, but fell asleep soon afterwards. The next night she slept without waking and during the last nine months, up to the time of writing these notes, she has had no asthma, with the exception of a slight wheeze, which was at once removed permanently by suggestion.

I would like to point out here that I consider that in many cases asthma is a functional disease of the brain and not of the lungs. It is remarkable how exceedingly erratic it is as regards its causation and cure. It looks like a vasomotor paresis in the lungs arising from the sub-conscious mind. We all know how blushing can be caused by a thought; so, under certain circumstances, can the vessels of the lung be dilated and occlude the air. As regards the causation, one person will acquire it in a locality where

another person is cured. Such things as a candle or an animal in the room may give rise to an attack, whilst the fumes of a chimney ease another person. The evidence of unconscious suggestion is very evident to me. Some intestinal or nasal disturbances give rise to asthma and have been cured by an emetic in the former and in the latter by operation or adrenalin. In these cases there may have been a reflex action only, but I doubt it. I consider that the vasodilation would be a definite act prompted by the suggestive sensation from the intestinal and olfactory nerves. So also with the many drugs which have been used for asthma with such varying effects, some may be sedative, but suggestion plays the more important part. While I am on this I would state that many of the drugs which are supposed to cure disease, act only by suggestion. When a drug is really beneficial there is no doubt about it, *i.e.*, mercury in syphilis, quinine in malaria, digitalis in heart disease, etc.. The result is constant, but when you get a disease like the vomiting of pregnancy, with a long list of drugs which have at times cured, but are never certain, I maintain that suggestion is the thing which acts. In the older days we had prescriptions made up of all sorts of gruesome animal and vegetable bye-products. Now we laugh at them, but many a modern practitioner thinks that he has prescriptions for each illness, which he finds beneficial, even if another man does not. No doubt if the doctor is sincere, the patient derives strength and benefit in many cases from the mixture, but not in the way either believes. Some leading men have felt the uselessness of a lot of drugs and give only the few certain ones or a *placebo*. Their prescribing confrères regard their treatment as weak and such statements as I am making a sort of heresy to orthodox and respectable medicine. However, it would be wise of them to study the power of suggestion well, unless they will be in later years classed with the mediæval physicians, whose prescriptions, if not quite so palatable, were just as scientific.

As I have said, these have been my views in regard to asthma before I treated a case by hypnosis; the result since seem to have supported their correctness.

Case IV.—A.C., aged 17. I was called in to attend her for chorea, which was general and severe. After having treated her unsuccessfully for several weeks, I tried hypnosis. Somnambulism was obtained in a few minutes, when all movements ceased. One afternoon, when she was convalescent, I made the mistake of attempting to hypnotize her sister in her presence. I was called up in the middle of the night, 36 hours later, and asked to see A.C., who was, they said, insane and imagined she was the operator. I felt sure it was a hysterical auto-suggestion, which had developed whilst watching me operate. I did not see her till next day and arrived amid the chaos of weeping relatives, which kept the hysteria going. She quietened down when I came into the room, but the tears were flowing down her cheeks. I hypnotized her and told her she would not act so again and would also forget she had been sad. On awakening, the first thing she did was to exclaim: "I must have been crying, for my cheeks are wet, but I do not remember doing so, nor know any reason why I should have." She was quite well now and left for a holiday.

The points of interest in this case are whether it was genuine chorea or hysterical. A sister had chorea some time before. A.C. could, therefore, have learnt the symptoms, which were remarkably like the ordinary form. However, when we consider that true chorea ceases during sleep, in spite of the germs in the cortex, it is not to be wondered at if genuine chorea can be cured. Several cases have been reported by European authorities.

Case V.—B. Experimental case, *i.e.*, not for illness. This subject was at first of the active type, *i.e.*, could analyse and describe her feelings when in somnambulistic state. A post-hypnotic suggestion was given that she would sleep soundly that night, as she had not been sleeping well. She did this, but a woman with whom she lived was taken ill the same night. B. got up, as there was no suggestion to the contrary and attended the woman. Next morning it seemed to her more like a dream and, though she had been up a considerable portion of the night, she was as fresh as if she had not left her bed. On another occasion she had to mind a baby, who cried much and kept her awake. A post-hypnotic suggestion was given to hear the baby and attend to what it wanted and when she was certain that baby was all right, to be undisturbed by cries or talking. This was done; B. attended baby in her sleep. She lay down and afterwards said she did not mind the baby laughing and talking; she had a good night, while the baby was perhaps better looked after.

Interesting variations in amnesia were examined, as follows. During hypnosis she was told that when she would be awake I would request her to think of a number—281. Moreover, this number would appear to come voluntarily into her mind. This was carried out and when I told her later that I could tell her the number she was thinking of, she thought it was mental telepathy. Another variation was to tell her that any number I mentioned would instantaneously and unconsciously take the place of any number in her mind; she would then think I could read her mind. This is really a falsification of memory. By Braid's method lethargy was produced and forgotten childhood memories were resurrected. In this patient I changed ordinary sleep into hypnotic, without waking.

Case VI.—G.N., a patient convalescent from influenza, had severe headache and anorexia. Somnambulism was induced and headache immediately disappeared. Appetite was suggested, so that on waking the patient asked for food and ate with relish. The headache, which had been severe, with some photophobia, did not return.

Case VII.—This patient suffered from dyspepsia, nervous depression, itching in various parts of the body, with supra-pubic tenderness and inability to work from fatigue. These neurasthenic symptoms had dated from a shock some months previously. During somnambulism all symptoms disappeared, but some reappeared in a less degree when awake. Several sittings were given, with marked improvement. Finally I suggested that the subject should feel strong, sit up and ultimately work. All this was carried out successfully and the patient was discharged, cured. Once I gave this patient a psychic

meal, when the dishes craved for would have been detrimental. The memory, etc., of meal persisted, with much satisfaction to the patient.

Case VIII.—Mrs. P. had a miscarriage. Uterine hæmorrhage persisted for nine days. The patient did not wish to be curetted, so hypnosis was suggested. At the first sitting somnambulism was produced and the hæmorrhage ceased at once. This subject suffered at other times from frequent and profuse menses, so, after she was convalescent from the miscarriage, I subjected her to frequent sittings and reduced the time of the menses from seven to four days, with diminution of quantity.

Case IX.—Mr. K. wished to be cured of tobacco craving. He smoked 1½ lb. per month, and found the craving irresistible. Somnabulism was obtained the first sitting and suggested that he should lose the inclination. Next evening he told me he had had only one pipe all day and had no inclination, but smoked it only to be in company with others. At the second sitting it was suggested he was smoking an imaginary pipe. He puffed with evident enjoyment, then it was suggested that he was smoking fæces. Disgust was evident on his face as he spat out. He was told afterwards he would always experience the same taste and disgust each time he tried to smoke. I was prevented by illness from giving him further treatment; he has not come back.

Case X.—F.D., 32 years, was recently confined by another medical man. She came to me with severe pain in the right ovarian region, running down the leg. She had severe headache, pyrexia, insomnia and vaginal discharge of pus. All these symptoms were removed by somnambulism. The pus gradually cleared up. She is now quite well.

Case XI.—Mrs. A.W., aged 24 years, had suffered from pain in the back for six months following an ectopic operation. She had seen several doctors, who suggested opening the abdomen. She was incapacitated for work and moved about holding her side, with much groaning. Somnambulism removed the pain at once. Next day she washed all day at a tub and felt quite well. She has not had a recurrence.

Case XII.—Mr. L. had a painful whitlow. He had never head of hypnotism. He was put off with "muscular phenomena." The whitlow was opened, while the patient's face was placid. He said on being awakened that he had felt no pain.

Case XIII.—Mrs. H. was suffering from melancholia, with suicidal and homocidal impulses. These symptoms came on after a shock; she suffered from anorexia. To make hypnosis more certain, I hypnotized another person (a young man) and put him into somnambulistic state. Though in most cases this is helpful, in this case it was a mistake, as patient became very excited and was difficult to control. At a subsequent sitting only light sleep was aimed at and obtained. The patient improved and ate heartily. However, it was not a complete cure, as she became despondent at times. As she lived 24 miles away from me, she gave up the sittings. I consider that, if I had taken this patient by herself at the start and gone for somnambulism, I might have obtained a complete cure.

Case XIV.—Mrs. R. had had rheumatism for several years in her hands and feet. She came to me with tender and painful hands. I applied somnambulism at once. Analgesia was produced in the fingers, so that I could squeeze her hand without hurting her. She awakened free from pain and wrote several long letters, which previously, she assured me, she could not do. Afterwards this patient came to me and told me that she had had a dream in which a voice told her I would never be able to hypnotize her again. This auto-suggestion, which had been visualized as a dream, gave me trouble and I failed twice, but the third time, by getting her to hold the hand of another somnambulist and putting them both off together I put her into deep somnambulism and have had no bother on subsequent occasions.

Case XV.—A returned soldier had been blown up in France two years previously. Since then he had had general tremors, shaking speech and pains in the lower region of the back. He suffered from insomnia. He wept when I asked him if he would like to be cured. I applied somnambulism. Like many who respond best, he smiled as I started to suggest and make passes. The tremors ceased and he wrote his name clearly. The pain was removed and he was then awakened. His hand was steady enough to thread a needle and the pain had gone. I have not seen him since, but presume he would have come back if he had had a relapse.

Case XVI.—B.C., aged 15, had had dysmenorrhœa since her menses started at thirteen years. She was helpless during the first day or two of the periods, which were profuse and lasted eight days. The intervals were irregular. She had fainted on several occasions from pain. Under somnambulism it was suggested that they should come on in a month, be painless and moderate. This happened and the subject knew that she was unwell only by finding blood on her clothes. She walked about and enjoyed herself for the first time during the onset of her period. Since then she has had two periods, both of which have been absolutely painless.

Case XVII.—Mrs. S. suffered from constipation during pregnancy. I applied somnambulism and suggestions that the bowels would act loosely. This was carried out and the patient has two loose motions daily ever since.

I might here point out that most cases of constipation should be regarded as a functional disease of the brain, not of the bowels. Just as emotions, such as fear, can cause a loose action of the bowels, so can suggestion cause the sub-conscious brain to send powerful impulses to the intestinal muscles and vasodilators, causing increased peristalses and outpouring of liquid. Purgatives are bad treatment for chronic constipation, as the brain requires the artificial stimuli to be repeated. This is not so with hypnosis, as the brain is merely ordered to use its own powers. The cures in chronic constipation, even after years, are permanent. It is the same way with the uterus. I would like to call attention to the way in which, in the case of fowls, increased laying power is brought about by an electric light at night, suggesting daylight, and so doubling artificially the number of days. A fowl, as everybody knows, is easy to hypnotize with a piece of chalk.

The above are some of the cases I have selected as giving an idea of some of the therapeutic uses hypnosis may be put to. Space forbids that I should go into more details or give more examples. I consider hypnosis is one of the best forms of psycho-therapeutics. It was first applied, as I have said, by M. Liébault many years ago and his pupil, M. Bernheim, has shown how suggestion is the basis of the treatment, by causing the brain to increase its latent powers over the body. These suggestions may be given during the waking state or in very slight degree of hypnosis. This has given rise to formation of methods of treatment, called psycho-therapy, and treatment in the "hypnoidal" state.

The former school hold that they treat the patient by persuasion or by reason and, no doubt, they get results. I consider they are, nevertheless, treating by suggestion. If persuasion were the only factor, surely a short, clear, explanatory conversation would be sufficient to cure the patient. On the other hand, for one who has studied suggestion, these so-called repeated persuasions are really suggestions repeated to increase the plasticity of the brain.

The "hypnoidal" state is merely hypnotism in which other prominent phenomena have not been suggested.

Both these are good in some cases, but hypnosis, which means suggestions falling on soil which has been made highly fertile, is better than either. In any case, as I have said before, they may all be classed under suggestive therapeutics.

Even psycho-analysis, about which I have no time now to write, probably acts by the powerful suggestion given to the brain by the correct diagnosis of the origin of the psychic disturbance.

Before closing, I would like to refer briefly to some of my researches under hypnosis, which may have thrown a little more light on natural sleep and dreams. As we know, in ordinary sleep we dream often, but usually forget most of them. Under hypnosis this memory can be revived; a person will describe accurately the dreams of any night. In other words, the consciousness of the natural sleep and hypnotic state join, or are the same.

It is very easy to suggest a dream with any emotion to take place on any future night during nocturnal sleep and I have carried out all possible variations of this. I always command the person that he will not tell me he has had to dream to please me, but to tell me exactly the truth.

One subject whom I had put into deep somnambulism—in fact, lethargy—was able to live over again her sleep of the previous night. She gave the following description: "I went to bed at midnight, gradually everything went black, then at 12.30 I began to see red and blue lines, which gradually formed themselves into a waiter of greater length."

Asked why she had this dream, she stated she had been to the theatre that night and had seen a play, in which there was a very tall waiter. She had been thinking of this going to bed. During the black period, and before the dream started, she said the thoughts of the play came back into her mind before the dream. Then suddenly the thoughts became very real and formed themselves into a dream. At 3 a.m. she had another dream, that she was walking on and on with her lover. She had been thinking a good deal of him in the afternoon. At 5 a.m. she dreamt that she was climbing a big hill and could not reach the top. Asked why she dreamt this, she said that in the afternoon she had an argument with her father about her lover, of whom he did not approve. In spite of much effort, she failed to convince him. This is a simple example of symbolizing of dreams, which is the basis of psycho-analysis. Asked on another occasion what made her dream, she said often a noise would bring her from the black (*i.e.*, deep sleep) to the dreaming stage. Freud holds all dreams have a sexual basis. Certainly these last two had, though to make one out of the first would seem like stretching facts. I agree with him that many of the dreams have such a basis, even when the associated connexion is not markedly evident, because the sexual instinct is the strongest natural motive in mankind. Asked how she could tell the time so accurately, she said she was not sure, but she seemed to be semi-conscious to the outer world and that she often heard the clock strike when asleep. This corresponds with the fact that often, when examining children during a night visit, they will hear my voice ordering them to sit up, cough, etc., and will obey, but will remember nothing of it in the morning.

Nightmares can be removed by post-hypnotic suggestion and, if necessary, replaced with pleasant dreams.

I would urge that the study of psychology should be taken up more seriously by the profession than it has been in the past. The subject is so extensive that I could have written much more on it, but I think perhaps I have said enough to show that it is just as important for a medical practitioner to know something of applied psychology as it is for him to be acquainted with physiology. We are apt to become too materialistic and look only on the body as a machine and think only of what is visible and tangible. Yet the vital force—the fuel of the machine—has been neglected.

The prejudice of a century is at last breaking down and I was glad to see that *The Medical Journal of Australia* is urging that lost time should be made up by earnest study and it was this which encouraged me to give you these hasty notes on a subject that has for a long time interested me.

TONSILLECTOMY AS A MEANS OF TREATMENT IN DIPHTHERIA CARRIERS.[1]

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and
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The prevalence of diphtheria is so great and the number of children in this town, who are carriers of the diphtheria bacillus, is so large that we are sure

[1] Read at a Meeting of the Queensland Branch of the British Medical Association on March 5, 1920.

the question must have had the attention of the majority of medical men of this town. We have been concerned, during the period of the observations which are detailed in the following pages, with the cases which were under treatment in the Children's Hospital.

During the year ending December 31, 1919, 999 cases of diphtheria were reported as occurring in the city of Brisbane and suburbs. During this same period 628 patients were admitted to the diphtheria block of the Children's Hospital. During the year, also, throat swabbing became a practice at our schools and it is surprising to find such a high percentage of "positive throats" amongst the school children. As an instance, we would quote the school of Windsor, which has 97 children who gave positive cultures out of a total of 800 scholars (12.12%). From September, 1918, to January, 1920, swabbings were taken from 1,986 patients admitted to the Children's Hospital and a positive culture was obtained in 85 cases (4%). (Report of the Sub-Committee of the Medical Board of the Children's Hospital, which was appointed to inquire into the question of the advisability of swabbing the throats for diphtheria bacilli of all the patients admitted to the Children's Hospital.)

We are well aware that in these instances the numbers include those cases of the so-called non-virulent type and that probably these are in the majority. The question of the treatment of "carriers" is the one which, in this paper, concerns us, and more particularly those patients in the Children's Hospital who are convalescent after an acute attack of diphtheria. We all agree, perhaps, that treatment by antiseptic spraying and swabbing does not, apart from preventing the spread of infection to others during the course of treatment, lead to satisfactory results and that these cases would probably have cleared up just as rapidly without such treatment. Graham-Smith asserts that he has "come to the conclusion that by antiseptic treatment the duration of the stay of the bacilli is not materially affected" and "several other authors have arrived at the same conclusion." However, this treatment has been, and still is, the routine at the Children's Hospital and the patients are not handed over to the throat surgeon until such periods as from five to ten weeks after admission, when the acute stage had subsided some four to eight weeks.

The health regulations of this State require three consecutive negative swabbings, at not less than 48 hour intervals, before the patient can be discharged. We would point out that previous to our practice of performing the operations of tonsillectomy and adenoidectomy, patients have remained in the hospital awaiting the three consecutive negative swabbings for as long a period as 190 days, and that some of these patients have been known to return with further attacks of diphtheria. We have before us the names of 22 patients who, during the last three years, 1916-1919, remained in the hospital for periods varying from 87 to 190 days. One of these patients was in for 152 days suffering from diphtheria of the pharynx, nose, ear and an amputation wound. The number who were retained for from 30 to 60 days, is considerably greater.

The exhaustive work by Nuttall and Graham-Smith on the bacteriology of diphtheria gives us much valuable information as to the difference between the virulent and non-virulent types of diphtheria bacilli. However, we hold that it would be difficult to say with any degree of certainty (especially in the present state of the bacteriological branch of the Health Department) that this or that case is of the non-virulent type. Graham-Smith quotes useful statistics concerning the periods of the persistence of the bacilli in clinical cases and contacts. The longest period of persistence quoted by Prip (1901), is 669 days. Woodhead (1901) has recorded the persistence of the bacilli for as long as 210 days. The authors referred to sum up the position as follows:—

> The various statistics which have been quoted prove that diphtheria bacilli may persist for very long periods in the throats and noses of both convalescent patients and infected contacts and retain their full virulence. They (the statistics) also show that in any given case it is impossible to foretell how long they will persist. Isolation for fixed periods of time could therefore be of little value and gives rise to a false sense of security.

Graham-Smith thinks that in many instances the removal of enlarged tonsils and adenoids may be of great benefit in hastening the disappearance of the bacilli. We wish to show that the above procedure does hasten the disappearance of the bacilli.

During the six months, October 5, 1918, to March 4, 1919, 50 cases of persistent carriers came under our observation in the diphtheria block of the hospital. Of this number 33 were admitted for acute diphtheria and the remaining 17 were admitted as carriers. It is not the practice to admit carriers into the hospital, but these patients were admitetd to help us in our observations. During the same six months there were 286 admissions to the diphtheria block, giving a proportion of 17.48% of the total cases admitted and, excluding the carriers, of 12.63%. The earliest period when an operation was performed after admission, was 5 weeks.

The age incidence is as follows:—

1 year and under 2 years	4
2 years and under 3 years	2
3 years and under 4 years	11
4 years and under 5 years	1
5 years and under 6 years	7
Under 6 years	25
6 years and under 7 years	5
7 years and under 8 years	2
8 years and under 9 years	7
9 years and under 10 years	3
10 years and under 11 years	3
11 years and under 12 years	3
	48
Adults. (nurses)	2

1 pharyngeal diphtheria (5 weeks): tonsils ++ and adenoids.
1 carrier: tonsils +.

Types of Infection.

Pharyngeal (2nd attack, 2)	24
Laryngeal	2
Pharyngeal and laryngeal	2
Pharyngeal and aural	2
Pharyngeal and nasal	2
Pharyngeal, nasal and aural	1
	33
Carriers	17
	50

Varieties.

Pharyngeal.

No.	Duration of Attack.	Condition of Tonsils.	Operation.	Cleared in.
1	7 weeks	Enlarged	Tonsillectomy	9 days
2	7½ weeks	Enlarged	Tonsillectomy	26 days
3	7 weeks	Enlarged	Tonsillectomy	9 days
4	5 weeks	Not enlarged	Tonsillectomy	16 days
5	6 weeks (2nd attack)	Greatly enlarged	Tonsillectomy	9 days
6	7 weeks	Enlarged	Tonsillectomy	9 days
7	6 weeks	Enlarged	Tonsillectomy	11 days
8	5 weeks	Enlarged	Tonsillectomy	10 days
9	5 weeks	Enlarged	Tonsillectomy	10 days
10	5 weeks	Not enlarged	Tonsillectomy	10 days
11	5 weeks (nurse)	Greatly enlarged and adenoids	Tonsillectomy	11 days
12	5 weeks	Not enlarged, but adenoids enlarged	Tonsillectomy	15 days
13	6 weeks	Enlarged	Tonsillectomy	15 days
14	8 weeks	Enlarged	Tonsillectomy	10 days
15	5 weeks	Greatly enlarged and adenoids	Tonsillectomy	10 days
16	— (2nd attack)	Not enlarged (previous tonsillotomy	Tonsillectomy	11 days
17	9 weeks	Enlarged	Tonsillectomy	8 days
18	5 weeks	Not enlarged	Tonsillectomy	9 days
19	6 weeks	Not enlarged	Tonsillectomy	13 days
20	8 weeks	Not enlarged	Tonsillectomy	13 days
21	5½ weeks	Enlarged	Tonsillectomy	8 days
22	5 weeks	Enlarged	Tonsillectomy	10 days
23	—	Enlarged	Tonsillectomy	8 days
24	5 weeks	Enlarged	Tonsillectomy	15 days
				Average: 11.45 days

Laryngeal Cases.

No.	Duration.	Condition of Tonsils.	Operation.	Cleared in.
1	5 weeks	Tonsils enlarged and adenoids	——	15 days
2	6 weeks	Tonsils not enlarged	——	14 days
				Average: 14.5 days

Pharyngeal and Laryngeal.

No.	Duration Since Onset of Attack.	Tonsils.	Operation.	Cleared in.
1	6 weeks	Not enlarged	Tonsillectomy	19 days
2	7 weeks	Not enlarged	——	11 days
				Average: 15 days

Pharyngeal and Aural.

No.	Duration Since Onset of Attack.	Tonsils.	Operation.	Cleared in.
1	7 weeks (severe)	Enlarged and adenoids	——	15 days
2	7 weeks	Not enlarged	——	9 days
				Average: 12 days

Pharyngeal and Nasal.

No.	Duration Since Onset of Attack.	Tonsils.	Operation.	Cleared in.
1	— (severe) (2nd attack)	Not enlarged	——	8 days
2	9 weeks	Enlarged and adenoids	——	8 days
				Average: 8 days

Pharyngeal, Aural and Nasal.

No.	Duration Since Onset of Attack.	Tonsils.	Operation.	Cleared in.
1	6½ weeks	Not enlarged	——	7 days

Carriers.[1]

No.	Duration of Detention in Hospital.	Tonsils.	Operation.	Cleared in.
1	5½ weeks	Not enlarged	Tonsillectomy	16 days
2	4 weeks	Not enlarged (previous tonsillotomy)	Tonsillectomy	10 days
3	Indefinite	Enlarged	Tonsillectomy	8 days
4	Indefinite	Enlarged	Tonsillectomy	10 days
5	3½ weeks	Enlarged and adenoids	Tonsillectomy	15 days
6	2½ weeks	Enlarged and adenoids	Tonsillectomy	11 days
7	2½ weeks	Enlarged and adenoids	Tonsillectomy	11 days
8	8 weeks	Enlarged	Tonsillectomy	25 days
9	Indefinite (nurse)	Enlarged	Tonsillectomy	14 days
10	Indefinite	Not enlarged	Tonsillectomy	10 days
11	7 weeks	Enlarged	Tonsillectomy	13 days
12		Greatly enlarged	Tonsillectomy	14 days
13		Enlarged	Tonsillectomy	14 days
14		Not enlarged	Tonsillectomy	6 days
15		Not enlarged	Tonsillectomy	6 days
16		Greatly enlarged	Tonsillectomy	28 days
17		Enlarged	Tonsillectomy	42 days
				Average: 14.8 days

[1] Previous period of infectivity unknown. All these cases were discovered because of acute diphtheria occurring in the homes. As far as possible all members of the affected families were "swabbed."

Appearance of Tonsils.

Not enlarged (previous tonsillotomies, 2; 2nd attack, pharyngeal, 3)	19
Enlarged	24
Greatly enlarged	7
	50

During the year 1919 over 100 tonsillectomies were performed upon persistent "carriers" in hospital and these gave an average of 10 days after operation until the three consecutive negative "swabbings" were obtained.

In all the cases the tonsils were enucleated by the "Sluder" method, Health's tonsillotome (latest pattern) being used. The naso-pharynx was carefully cleared of all vegetations by the "*La Force*" adenotome, followed by a simple curettage and scraping with the finger nail. Ethyl chloride anæsthesia was used in all the operations.

It will be noticed that the average length of time in the pharyngeal cases before coming to operation was 5½ weeks and the average time after giving the three negative "swabbings" was 11.41 days after the operation:—

Laryngeal cases (5½ weeks before operations) took 14.5 days to clear.

Laryngeal and pharyngeal cases (6½ weeks), 15 days to clear.

Pharyngeal and aural (7 weeks), 12 days to clear.

Pharyngeal and nasal, 8 weeks to clear.

Pharyngeal, aural and nasal (6½ weeks), 7 days to clear.

Carriers took on an average 14.8 days to clear.

The average in the simple carriers was increased by five cases, which took 15, 16, 25, 28 and 42 days respectively to clear.

In passing we would here like to quote the case of a boy who had been known to be a "carrier" since November 19 and who, up to the time of his admission to hospital 14 days ago, gave 11 positive "swabbings." Ten days after tonsillectomy and adenoidectomy he had yielded three consecutive negative cultures. It will be noticed that the cases which were clinically pharyngeal, cleared up on an average three days earlier than the laryngeal group.

We are of opinion that the above figures suggest that the tonsils are frequently the site of the growth of the organisms. We do not, however, wish to exclude the other lymphoid areas in the bucco-and naso-pharynges or the nasal sinuses, as possible seats of infection. The evidence would rather lead us to assume that lymphoid tissue, the tonsil in particular, is the favourite situation for the growth of the organisms.

Regarding the bacteriology of the removed tissue, 22 tonsils and 8 pads of adenoids were examined at the bacteriological department of the hospital. The results are as follows:—

Bacteriology.

	Surface.
Culture from tonsils	13 + 3 pure cultures
	9 —
Culture from adenoids	2 +
	6 —
Culture from sub-capsular region ..	8 + 1 pure culture
	11 —

The question of obtaining cultures from the sub-capsular region presented some difficulties. We adopted the method of searing the capsule with a red hot blade, then puncturing the seared area with a sterile knife and taking the smear from the bottom of a crypt immediately beneath the capsule. The method has this disadvantage, it errs on the side of under-estimation, for the cultures from each tonsil were only taken from one puncture. The possibility of destroying the organisms by the searings must not be lost sight of. However, the positive cultures in 8 out of 19 cases must be considered as strong evidence. Seven of the eight positive cultures were mixed infections; only one case yielded a pure culture. We attempted to cut serial sections of embedded tonsils, but the procedure had to be abandoned on account of the absence of proper facilities.

The literature on this aspect of the subject is not very large, but we have been able to peruse the following:—

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In his paper on tonsil enucleation contained in the *British Medical Journal* of October 4, 1919, W. H. Bowen gives details of the microscopical sections of tonsils prepared by Graham-Smith. He remarks:—

> They show the difficulty of any attempt to clear the organisms (diphtheria in this instance) from the bottom of some crypts. In one case the crypt, after running about half the depth of the tonsil, suddenly turned upon itself at an acute angle and ran down to the very base of the tonsil (capsule) where it expanded into a small cavity full of bacilli.

Bowen considers that the persistence of the bacilli is sufficient to warrant the enucleation of tonsils.

Hubbard (*Annals Otol., Rhinol., Laryngil.*, March, 1917) maintains that "thorough tonsillectomy and adenoidectomy are proving very efficient in rooting out carriers."

Ballantyne and Cornell (*British Medical Journal*, November 24, 1917) reported six cases in which tonsillectomy was done on diphtheria carriers. They consider that the complete enucleation of the tonsils seems to be a successful means for eliminating diphtheria organisms from carriers. They think, however, that it may be too drastic a measure for routine adoption.

In conclusion we would like to emphasize the following points:—

(1) Carriers of diphtheria bacilli (and morphologically similar bacilli) are far too prevalent.

(2) Bacilli can frequently be found in the deepest portions of the tonsils.

(3) The explanation for the disappointing results obtained by antiseptic swabbings and spraying can be found in the above-mentioned fact.

(4) From inquiries of certain medical officers who have seen a large number of cases of diphtheria, we learn that no case of faucial diphtheria has come under their notice, which has occurred in those children who had previously had thorough tonsillectomy and adenoidectomy performed.

One of us has seen no such case in over 600 cases of diphtheria, although it is not a rarity to see cases of faucial diphtheria occurring in children who have only had tonsillotomy performed. One patient of our series was re-admitted with a mild attack of laryngeal diphtheria six weeks after operation. This patient was originally admitted with severe laryngeal diphtheria.

(5) The results obtained in our series of cases are sufficient to warrant the procedure of the enucleation of the tonsils and the thorough removal of the adenoids as a routine in all cases of persistent carriers of the diphtheria bacilli.

We wish to thank the Honorary Physicians of the Children's Hospital for their generous assistance, and Dr. S. Page and Miss Crawford, Bacteriologist and Assistant Bacteriologist of the Hospital respectively, for the trouble taken in the bacteriological work in connexion with this paper; and the resident medical officers and the Matron for their help in connexion with the statistics.

References.

(1) "The Bacteriology of Diphtheria," Nuttall and Graham-Smith, Cambridge University Press.

(2) "Operations on Tonsils and Adenoids in Diphtheria Carriers," Hubbard, *Annals Otol., Rhinol., Laryngol.*, March, 1917.

(3) "Tonsillectomy in Diphtheria Carriers," Ballantyne and Cornell, *British Medical Journal*, November 24, 1917.

(4) "Diphtheria Carriers," Costa, Trosisier and Dauvergne, *Revue d'Hygiène*, October, 1919.

Reviews.

THE DIAGNOSIS OF CANCER.

We have received for review an extraordinary book by Dr. O. C. Gruner, of Leeds, on the exact diagnosis of cancer.[1] The title is amplified in a manner which arouses the suspicions of the reviewer that the author has to descend to the time-worn expedient of using tautological adjectives to cover the weaknesses of his arguments. No diagnosis is worth consideration that is not exact, nor can a significance be anything but true. From the perusal of this book we would be inclined to doubt whether the measures advocated by the author are capable of leading to a diagnosis under any circumstances; while the methods of studying the morphology of the blood may be of value, they are probably based on phantasy. It would occupy too much space were we to endeavour to describe the author's scheme. Suffice is to relate that he makes stained films of blood and wet preparations and from these somehow arrives at a conclusion of the size, colour, shape and other qualities of the erythocytes and leucocytes. He refuses to use exact measures of record, but prefers to guess at the extremes, to place the normal half way between the extremes and to subdivide the space between the extremes and the normal into two, albeit unequal compartments. He thus arrives after the exercise of what appears to us to be an unwarranted amount of imagination at five classes for each quality. Having fixed the value for each quality, he endeavours to mark the point on a straight line drawn arbitrarily from a base to an apex obliquely across his squared paper. This line traverses his five groups. Unfortunately for the theory, his imagination has failed to standardize either the normal values or the hypothetic gradient of what he terms the collective quality. From the artificial figures obtained by this curious mental effort, he claims to be able to disclose changes in the qualities of the blood elements characteristic of latent cancer. Not a single sentence is given in support of the assumption that the morphology of the blood is modified during the development of a malignant tumour. It may eventually be found that such a change occurs. The author of this book will not be able to claim priority in this discovery, because he has merely put some confused ideas on paper and has not even taken the trouble to demonstrate the alleged coincidence of the characteristic findings with malignant tumours proved by histological examination to exist. The book is well produced by Messrs. H. K. Lewis & Company, Limited, and has a nice cover.

Notes on Books.

"The First Aeroplane Voyage from England to Australia," a handy production by Messrs. Angus & Robertson, Limited, of Sydney, is a book every Australian should possess and keep.[2] Sir Ross Smith, K.B.E., tells in four short pages the thrilling narrative of the conception of the idea of a flight from England to Australia, of the realization of the attempt and of the achievement. There are the salient facts without embellishment, with but few details, told in simple language. Much is left to the reader's imagination. But the further details of the grand conquest of the air have been recorded in history and Sir Ross Smith's story gains by its brevity and modesty. The remainder of the book is occupied by 27 full page illustrations of Sydney and other parts of New South Wales from an unusual aspect. The pictures are by Captain Frank Hurley; no further recommendation is needed. They are artistic; they are wonderful; they are almost uncanny.

[1] The Exact Diagnosis of Latent Cancer, An Enquiry into the True Significance of the Morphological Changes in the Blood, by O. C. Gruner, M.D.; 1919. London: H. K. Lewis & Co., Ltd.; Royal 8vo., pp. 79, illustrated by 19 plates.

[2] The First Aeroplane Voyage from England to Australia, by Sir Ross Smith, K.B.E., M.C., D.F.C., A.F.C., with Aeroviews by Captain Frank Hurley; 1920. Sydney: Angus & Robertson, Limited. Price, 2s. 6d..

"Our Alma Mater," dated December, 1919, the annual magazine of St. Ignatius' College, Riverview, has again been sent to us by the editors. This yearly publication set itself a high standard of excellence some years ago and this standard has been maintained in each issue that has come into our hands. It is not merely a clever piece of editing and compiling, of reproduction and of printing; it is not merely a record of a year's events at a school. It is actually a reflection of an establishment where Australian boys gain a first-class education and where they are fitted to maintain the traditions of their race. The 1919 issue, like its immediate predecessors, is largely devoted to war records. The Riverview boys have done wonderfully and it is fitting that their magazine should give a proper account of their achievements. The letter press has been carefully compiled and the illustrations are of unusual excellence. We congratulate the editors and the school on its successful number of "Our Alma Mater."

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the five weeks ending March 27, 1920:—

	Metropolitan Combined District. Cs.	Dths.	Hunter River Combined District. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	41	5	8	0	90	9	139	14
Scarlatina	39	0	5	0	70	0	114	0
Diphtheria	241	4	83	2	424	7	748	13
*Pul. Tuberculosis	86	39	13	4	10	3	109	46
C'bro-Sp'l Menin.	1	0	0	0	0	0	1	0
Poliomyelitis	1	0	0	0	0	0	1	0

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the five weeks ending March 27, 1920:—

Diseases.	No. of Cases.
Enteric Fever	131
Scarlatina	35
Diphtheria	345
Pulmonary Tuberculosis	41
Cerebro-Spinal Meningitis	3
Malaria	2
Erysipelas	12
Hæmaturia	8
Puerperal Fever	1
Pneumonia	8
Influenza	60

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the six weeks ending March 27, 1920:—

	Adelaide. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	8	2	31	1	39	3
Scarlatina	24	2	126	3	150	5
Diphtheria	32	6	212	5	244	11
Pulmonary Tuberculosis	11	8	57	22	68	30
Cerebro-Sp'l Meningitis	0	1	2	1	2	2
Erysipelas	4	0	8	2	12	2
Morbilli	42	0	192	0	234	0
Pertussis	1	0	28	2	29	2
Puerperal Fever	1	1	0	1	1	2
Malaria	0	0	1	0	1	0
Influenza	1	1	26	4	27	5

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the five weeks ending March 28, 1920:—

	Metropolitan. Cs.	Dths.	Rest of State. Cs.	Dths.	Total Cs.	Dths.
Enteric Fever	25	0	60	3	85	3
Scarlatina	121	0	197	0	318	0
Diphtheria	312	7	558	4	870	11
Pulmonary Tuberculosis	65	31	29	11	94	42
C'bro-Spinal Meningitis	0	0	1	0	1	0
Puerperal Fever	0	0	2	0	2	0

WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the six weeks ending March 27, 1920:—

	Metropolitan. Cases.	Rest of State. Cases.	Total. Cases.
Enteric Fever	51	40	91
Scarlatina	39	23	62
Diphtheria	59	49	108
Pulmonary Tuberculosis	25	23	48
Septicæmia	2	0	2
Malaria	5	1	6
Beri-beri	0	3	3
Erysipelas	5	2	7
Dengue Fever	0	2	2
Dysentery	1	3	4
Pneumonia	2	5	7

Naval and Military.

APPOINTMENTS.

The following information is contained in the *Commonwealth of Australia Gazette*, No. 34, of April 8, 1920:—

Permanent Naval Forces of the Commonwealth (Sea-Going).

The temporary appointments of the following officers are terminated as on the dates set out opposite their respective names:—

Temporary Surgeon-Lieutenant Hugh Alton Chandos Wall, 16th September, 1919.
Temporary Surgeon-Lieutenant Sydney O'Neill, 1st December, 1919.

Australian Imperial Force.

APPOINTMENTS TERMINATED.

Second Military District.

Major-General Sir N. R. Howse, V.C., K.C.B., K.C.M.G., 1st January, 1920.
Major E. K. Parry, M.C., 31st March, 1920.
Major C. B. Pym, 2nd April, 1920.
Captain H. L. Beale, 23rd March, 1920.
Captain C. R. Wiburd, 5th March, 1920.
Captain H. P. Clark, 14th February, 1920.
Captain W. F. D. La Touche, 6th March, 1920.
Captain R. P. Rundle, 26th February, 1920.
Captain O. Latham, 7th February, 1920.

Third Military District.

Major F. D. H. B. Lawton, O.B.E., 28th March, 1920.
Major D. Bennett, 25th February, 1920.
Captain K. C. Purnell, M.C., 13th March, 1920.
Captain N. McColl, 2nd March, 1920.
Captain E. H. Britten, 12th March, 1920.
Captain F. R. Meagher, 13th February, 1920.
Captain D. G. May, 1st February, 1920.
Captain H. G. Brown, 26th February, 1920.
Captain W. R. Trembath, 13th September, 1919.
Captain T. M. Hendry, 11th February, 1920.

Fourth Military District.

Lieutenant-Colonel S. R. Burston, C.B.E., D.S.O., 7th March, 1920.
Major J. B. Birch, M.C., 7th March, 1920.

The Medical Journal of Australia.

SATURDAY, APRIL 17, 1920.

The Medical Profession and the State.

When the call to arms was sounded throughout the length and breadth of the British Empire, the medical profession immediately stood at attention and its members fell in without question and without hesitation. The national medical service, represented by the Australian Army Medical Corps, performed its task with signal success, because the nature of the work required of it was universally understood and the necessity of the service universally recognized. This lesson must be taken to heart and remembered. When extensive aid for the community is required of the medical profession, success or failure will be measured by the degree of understanding of the problems involved and by the amount of approval accorded to the scheme by the members of the medical profession.

For many years it has been held in civilized communities that the general principles of hygiene must be applied by public services under the control of Parliament, of the Government or of a special Minister. At first the responsibility for the application of hygienic measures was restricted to somewhat narrow limits. The extension of this activity has taken place gradually until the tasks have outgrown the machinery provided. Hygiene is now held to include preventive medicine, sanitation, collective hygiene in the school, psychiatry, the control of the health of the industrial worker and many other branches of knowledge dealing with the preservation of the health of the community and with the diminution of disease and of physical and mental deterioration. While the greater part of the medical profession is engaged exclusively in the endeavour to cure disease or to lessen its deleterious effects, the vastly more important work of endeavouring to eradicate disease, to limit the inheritance of physical and mental defects and to eliminate noxious influences in industrial life, is entrusted to a small *coterie* of trained hygienists. No wonder that the public, not understanding the elements of the situation, has demanded a reform of the medical profession. The medical profession itself has at last awakened to a sense of its responsibility and agrees in principles with the thesis that one of its most important functions is prevention. Unfortunately the individual medical practitioner is disinclined to take an active step in the direction of co-ordinated action.

The reform to which we refer, will be introduced either with or without the consent and approval of the medical profession. Its success will be determined to a great extent by the manner in which the proposals are received by those who will have to carry them into effect. In these circumstances, a clear conception of the various proposals is needed. Certain terms have been introduced into common use and, even if they are vague and to some extent misleading, these terms should not be confused. There is ample evidence that confusion exists to-day in this connexion. It may be stated for the purpose of gaining a practical view of the horizon that three general schemes have been proposed. The first and oldest is that of a State scheme of sickness insurance. The term usually employed is national insurance. In Europe this scheme, varied according to the local conditions, has been introduced primarily to provide persons of small means with medical attendance (medical benefit) and with money (sickness benefit) during illness, to enable these people to defray the cost of burying their deceased relatives (funeral benefit) and to safeguard them against pecuniary loss during childbirth (maternity benefit). Attached to some of the insurance schemes is an invalidity and old age insurance. While national insurance is essentially an extended and properly regulated form of friendly society activity, its centralized machinery offers an opportunity for the introduction of a certain amount of preventive work. In Great Britain the Government contributes one penny for each insured person to the so-called tuberculosis benefit, which in reality is an extensive department of medical research. The idea emanated in the German insurance scheme which set aside out of the accumulated funds considerable sums of money year by year for the establishment of sanatoria and other expensive means of treating tubercular and other widespread diseases. The British

tuberculosis scheme includes the equipment and staffing of tuberculosis dispensaries, sanatoria and the like, while the Medical Research Committee owes its origin to the proposal to introduce an organized effort to combat this and other national scourges. It must therefore be recognized that national insurance in the generally accepted sense of the term means the provision of medical treatment for persons affected with disease and unable to meet heavy financial obligations, with a certain amount of preventive activity appended to it. It has undoubtedly proved itself to be a real remedy for pauperism, since it frees the poor from unexpected liabilities and is essentially a compulsory form of providence. In a community which is happily prosperous and which does not contain a great deal of pauperism, national insurance is a clumsy, expensive and redundant method of regulating the activities of the medical profession. The friendly societies should be able to perform all the essential tasks of national insurance in Australia. All that would be needed would be divest the societies of the ballast of the ancient guilds, to exclude political organizations from the registered friendly societies and to compel all the societies to gain proper control over their orders, lodges and members.

The second scheme is called nationalization of the medical profession. This term is as absurd as its significance is unacceptable to the medical profession. Those who put it forward, wish to deprive medical practitioners of the right to practise curative medicine as free individuals. They would make every registered medical practitioner a salaried medical officer, with the duty of rendering medical attendance to those citizens who might be allotted to them in one way or another. The scheme does not appear to include any provision for enhanced efficiency or for the application of co-ordinated action for the prevention of disease. It is possible that the service would be planned in such a manner that a considerable extension of the present system of public health and other governmental medical services might be effected. Apart from the objections that would be entertained by the majority of medical practitioners to relinquishing their freedom, this scheme would inevitably result in a deterioration of the practice of medicine. Moreover, the expense involved in any attempt to include in such a scheme an extension of departmental medical activities would be prohibitive.

The third proposal is the scheme for an extension of the public health services. The Federal Committee of the British Medical Association in Australia has put forward a number of suggestions for a constructive reform in this category. Essentially these proposals involve a considerable extension of the departmental services, both by the creation of a Federal department and by a better co-ordination of the State departments. They involve in addition the co-operation of the general medical practitioner with the departmental officers, so that all the aims of modern hygiene would be brought into the sphere of practical politics. There would be no interference between the medical practitioner and his patient, beyond that prescribed by the law regulating the notification of transmitable disease. The efficiency of the medical practitioner would be enhanced by constant collaboration with the expert in hygiene and its branches. The knowledge and experience of the family physician would prove invaluable to the hygienist, while the gain to the community by an organized effort of a large army of medical practitioners to gain mastery over certain preventible diseases, would be incalculable. Moreover, since no single medical practitioner would be required to devote much time or to give much energy to the work, the scheme would not meet with objection on his part. The community would gain by a wider and more active display of energy by departmental medical officers, whose public services would be constantly subjected to critical control by those collaborating with them. There are many details to be elaborated before the scheme can be applied, but the general principles on which it is based, should be clearly understood by every member of the medical profession.

HISTAMINE AND SHOCK.

The interesting discussion at a meeting of the Victorian Branch of the British Medical Association, which was reported in our columns last week, on the nature of surgical shock, reveals a disinclination on the part of practical surgeons to examine the problems of their daily work in chemical terms. Dr. Victor Hurley, C.M.G., is to be congratulated on his lucid and admirable exposition of the work conducted

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in France and Great Britain on this important subject. He has shown clearly that certain facts have been elicited which have an undoubted bearing on the production of secondary shock. One of the most important of these facts is that the blood pressure is lowered, while the arteries are contracted and while the total volume of blood in active circulation is lessened. In primary shock, when the reflex mechanism is profoundly affected the blood tends to collect in the capillaries of a dependent area. In secondary shock, while the blood accumulates in the capillaries, gravitation does not appear to play an important part. Physiologists have endeavoured to fathom the mysteries surrounding this paradox. To neglect the teaching of the physiological laboratory, because some observers have travelled too fast in constructing theories on insufficient data, is as unreasonable as it would be if physiologists refused to take heed of phenomena properly observed in the clinic. Surgeons, however, have watched the clinical manifestations of shock ever since the beginning of the world and have failed to distinguish between the primary changes effected by nervous inhibition and the secondary changes, resulting from some agent acting more or less indirectly. A great advance has been made in France during the latter period of the war by the close co-operation between the surgeons and the physiologists and we are now in possession of many pieces of information of much value.

Dr. Hurley has given brief accounts of some of the theories advanced to explain the mechanism of secondary shock. He dismisses the chief theories with few words. Those who have followed the experimental work, will agree that none of the five suggestions can account for the symptom complex known as surgical shock. On the other hand he relates some important stories under the heading of contributory causes. It is possible and even probable that one of his contributory causes may eventually prove to be an essential. Dale and Laidlaw proved that histamine had the power of dilating the capillaries, contracting the arteries and inducing symptoms indistinguishable from those of secondary shock. Dr. Bull, in discussing this aspect of the matter, called attention to the likeness of shock to the phenomenon known as anaphylaxis. A few years ago it was held by several authorities that the toxic agent in anaphylactic shock was one of the amine products of protein, β-iminazo-amine, because this substance produced signs and symptoms very similar to those of anaphylaxis. Later this theory was relinquished. Histamine is in chemical language β-iminazolylethyl-amine. The suggestion of an identity between surgical shock and anaphylaxis has probably been based on some similarity and not on actual coincidence. Not long ago Abel and Kubota showed that histamine appeared to be indistinguishable from the depressor substance and plain muscle stimulant of the posterior lobe of the pituitary gland. It has been demonstrated that in experimental shock there is an increase of adrenalin in the circulation. The suggestion of the identity of the two substances has recently been challenged on the ground that the uterus of the rat is very tolerant to histamine, but that pituitary extract produced a great increase in tonus. Abel has gone a step further and has demonstrated that if the dilution of the histamine is approximated to that of the glandular extract in these experiments, the effect on the rat's uterus is one of increased tonus in both cases. H. W. Dudley has shown, however, that there are several essential chemical differences between the purified active principle of the posterior lobe of the pituary gland and histamine. It has been suggested that histamine is produced by injury to muscles. Shock occurs at times without any extensive injury to muscles. Abel's work, however, would seem to show that a substance closely allied to histamine, can be produced in the posterior lobe of the pituitary gland. There is the evidence of a disturbance of one of the endocrine glands, the adrenal. If the essential changes in shock can induce an increased output of adrenal hormone, it could also induce an increased output of one of the pituitary hormones. The evidence available at present points to an indirect chemical process in secondary shock. Whether this process is wholly or partially dependent on bio-chemical changes resulting from injury to tissues, or whether it is caused as a result of an altered nervous mechanism cannot be determined until more facts are ascertained. It is probable, notwithstanding the unsatisfactory nature of the theories put forward, that the data required for a fuller understanding of the nature of shock will be supplied from the physiological laboratory.

THE BACILLI OF TETANUS.

The laboratory has recently demonstrated its practical value in the differentiation between infections formerly grouped under a single heading. Typhoid infections were at one time dealt with as a single disease. Schottmüller showed that bacilli closely allied to *Bacillus typhosus* were capable of producing lesions distinguishable from those met with in enteric fever. Later the differentiation between the typhoid and the paratyphoid bacilli by means of agglutination tests has become the standard method of diagnosis. Similarly the anomalous clinical behaviour of cases of Malta fever has been traced to an infection by *Micrococcus paramelitensis*. The peculiar characteristics of the Flexner and the Shiga types of *Bacillus dysenteriæ* enable the bacteriologist to guide the clinician to the correct mode of treating these infections. Again, the pneumococci have been shown to represent several distinct types and prophylactic treatment is more efficacious if the prevalent types are employed. In short recent investigations have tended to prove that nearly every pathogenic bacterium exists in two or more variant forms, differing from one another in regard to virulence, bio-chemical qualities and specificity. It has, however, been shown that the organisms of each group are closely related and that the body infected with one type, reacts to a greater or less degree to the variants, although not so readily as to the infecting type. It is always economical and frequently essential to employ the prevalent type in immunizing, since the degree of protection is undoubtedly greater when the proper type is used. Dr. W. J. Tulloch has recently carried out some ingenious investigations with a view to ascertain whether the occasional failure of preventive inoculation against tetanus may not be due to the use of types of bacilli differing in serological characters from those of the type infecting the patient.[1] The work proved difficult owing to the cultural peculiarities of the spore-bearing anaerobes. A tedious research was required to elaborate a medium capable of exercising a selective action on certain groups of organisms. It was found that the bacteria from wounds in cases of tetanus embraced bacilli with centrally-placed elliptical spores, the so-called sporogenes bacilli, bacilli with spherical, terminally-placed spores, the tetanoid types and bacilli with terminally-placed, oval spores. The sporogenes bacilli usually overgrow the two other forms. It was shown that tetanus bacilli started to grow in meat water medium after sporogenes bacilli have induced a considerable amount of protein cleavage. Attempts were made to exhaust the medium of its pabulum for sporogenes bacilli and then to use the material, freed from these bacilli for the culture of the other anaerobes. Various devices were tried to separate the tetanoid from the oval spore bacilli. Eventually a medium was gained which favoured the growth of the tetanoid bacilli, although the oval spore bacilli were capable of growing in it. A series of strains of tetanus bacilli was obtained. Some of the strains were derived from laboratory stock cultures, while others were isolated from wounds in soldiers. Dr. Tulloch warns bacteriologists who may engage in this form of work, not to speak of these cultures as pure, since he was able to show that their purity was rarely more than relative. With care and suitable media, it was possible to test these strains against standard sera and against the sera of infected animals. By means of agglutination tests and of absorption tests, he was able to demonstrate that the standard United States serum agglutinated the strains derived from various institutes, but failed to agglutinate the strains isolated from wounds. The sporogenes serum agglutinated the homologous bacilli, but neither the tetanoid nor the oval spore bacilli. A pseudo-tetanus serum was also shown to be specific. Similarly a serum active to the bacilli isolated from a wound in a soldier failed to produce agglutination with any other tetanus bacillus or with sporogenes or pseudo-tetanus bacilli. Further experiments brought to light that among the strains used by him, there were four distinct types. Three of these types were freshly isolated bacilli from wounds. One proved to be relatively common and could be identified with something approaching certainty by serological methods. Dr. Tulloch has endeavoured to exclude other explanations of the phenomena observed. He suggests, apparently with good reason, that if these types are distinguishable in this manner, their behaviour will probably vary when their toxins are brought into contact with standard antitoxins. This point is being carefully investigated. If his contention proves correct, it will be essential to prepare antitoxins for as many types of tetanus bacilli as can be distinguished. Incidentally, he has found that the wounds of soldiers infected with tetanus contain in addition to the tetanus bacilli and the sporogenes bacilli, bacilli indistinguishable from tetanus bacilli by morphological means, which do not produce any toxin. The sporogenes bacilli appear to favour the growth of the tetanus bacilli and it is not improbable that these non-toxic tetanus bacilli may stand in close symbiotic relationship to true tetanus bacilli. There is much to suggest that this take place. These facts, the frequent association of other anaerobes with tetanus bacilli and the enhanced power of growing rapidly in the presence of putrefaction, may be of significance in the prevention and possibly in the treatment of tetanus. Further studies are needed to bring to light many qualities of tetanus bacilli. It must be recognized that this is not merely a question of military interest. Tetanus occurs in civil life and becomes increasingly prevalent as the soil is cultivated by man.

[1] *Journal of the Royal Army Medical Corps*, December, 1917.

ALBUMINURIA AND WAR NEPHRITIS.

Recent investigation of albuminuria amongst recruits in training and of cases of war nephritis amongst troops in France has thrown considerable light on the incidence and ætiology of these conditions. Extensive observations were made during the war by Captain H. MacLean.[1]

The conditions of active service tended in a special degree not only to light up old-standing lesions,

[1] Albuminuria and War Nephritis Among British Troops in France, by Captain Hugh MacLean, R.A.M.C. National Health Insurance, Medical Research Committee, Special Report Series, No. 43.

but also to tax heavily any kidneys that were functionally inefficient or inadequate for the strain of active warfare. The number of cases of war nephritis recorded during the war was too large to be accounted for on this hypothesis. The incidence of albuminuria in sixty thousand men in training was found to be 6.48%. It was found that the albuminuria in soldiers in active training was not increased by the conditions associated with training and was in all probability present to an equal extent in civil life. Observations upon troops undergoing severe training confirmed the fact that the albuminuria which is produced by sudden severe exertion, passes off on resting and does not appear to become any more marked with prolonged training than it was at the beginning. There is no evidence that it tends to become chronic. Previous albuminuria has been found to play little or no part in the ætiology of war nephritis, nor has war nephritis any connexion with former illnesses, previously existing nephritis, of course, excepted.

While many authorities believe that the presence of epithelial casts in moderately large numbers is pathological and indicates some definite lesion of the kidney, it is often supposed that the hyaline variety is of little significance. Observations of many patients suffering from acute nephritis make it certain that in many cases casts of the hyaline variety may be the only casts present. That the renal tissue may be defective and the urine practically free from casts is proved by the fact that the urine in acute nephritis may during convalescence contain neither albumin nor casts and yet the kidney efficiency, as indicated by the diastatic reaction and other tests, may be very low.

In considering the ætiology of war nephritis it is possible to exclude exposure and fatigue, water supply, diet, alcohol, metallic poisoning and previous illness. A definite infection is regarded as underlying the vast majority of the recorded cases. The claim of Bradford, Bashford and Wilson that they had succeeded in isolating from nephritis cases a minute, filter-passing organism has failed to receive confirmation at the hands of other workers and may be dismissed. No infective agent has as yet been definitely isolated. Chemical investigation of the blood in acute cases has demonstrated that, except in the mildest forms, there is generally an accumulation of nitrogenous bodies in the blood due to the inability of the kidney to excrete the ordinary products of metabolism. In the great majority of cases a very definite hydræmia is present, which appears to be closely related to the rise in blood pressure. Retained fluid first of all tends to cause dilution of the blood, which is intimately related to the rise in blood pressure. As the blood dilution increases the fluid naturally passes into the tissues. This takes place when the osmotic tension of the blood proteins, already lowered by the dilution of the blood, is no longer able to counteract the tendency of the increased blood pressure to drive fluid into the tissues. When the kidneys begin to act, the concentration of the blood tends to be lowered, with the result that a reverse current is set up resulting in the passage of tissue fluids into the blood and then into the urine. The passage of fluid into the tissues may be accelerated by damage to the capillary wall, resulting from the toxic processes which were responsible for the renal lesion. Chemical investigations of the blood in war nephritis indicate that there is no essential difference between this and other types of nephritis. The results bear out the general view that in many cases there is an increase in the concentration of urea in the blood, while the chloride content varies and may be less or more than that usually supposed to represent the threshold value of normal individuals.

Observations on chronic renal disease resulting from war nephritis lead to the definition of two well-marked types of impairment of renal function: (*i.*) the azotæmic type and (*ii.*) the hydræmic type.

In the azotæmic type the predominant feature is a marked tendency to retention of nitrogenous products (urea, etc.) in the blood. The cardio-vascular system often shows signs of degeneration. The urea concentration in the urine is diminished and the diastatic reaction gives a low result. The diastatic reaction is estimated by the power of the urine to hydrolyse starch. There is no œdema and the urinary protein may be slight in amount.

The chief manifestations of this type correspond to those found in typical cases of chronic interstitial nephritis.

In the hydræmic type of case the condition is wholly different. Œdema is present and there is a tendency for the urinary chlorides to be reduced. There is no retention of nitrogenous products, the diastatic value is high and there is little cardiac involvement. A marked feature is the large amount of protein found in the urine. The chief manifestation is a retention of water resulting in an excessive proportion of fluid in the body. This type corresponds in symptoms and chemical findings to the parenchymatous forms of chronic renal disease.

It is probable that the azotæmic type is chiefly dependent on some lesion connected with the capillaries of Bowman's capsule and other capillaries of the kidney, whereas the hydræmic variety is associated with a lesion of the renal tubular epithelium. In the first case the essential lesion appears to be connected with the circulatory system of the kidney, while in the second the kidney cells are at fault.

Either of these types of renal disease following war nephritis may be followed by complete cure, contrary to what is found in chronic nephritis due to other causes.

NATIONAL ASSOCIATION FOR THE PREVENTION AND CURE OF CONSUMPTION OF NEW SOUTH WALES.

The annual report of the National Association for the Prevention and Cure of Consumption of New South Wales for the period January to December, 1919, shows that the work during the year was considerably interfered with by the epidemic of influenza. The annual meeting was held on March 26, His Excellency the State Governor presiding.

During the year 134 new patients were admitted to the Dispensary. The total attendances numbered 2,362. In addition to this 413 patients were visited in their homes by the sister. Generous contributions are required to obtain more suitable buildings to replace the present premises. It is also desired to establish a rest home for delicate children and a farm-colony for open air treatment.

Abstracts from Current Medical Literature.

THERAPEUTICS.

(134) Benzyl-Carbinol.

The usual substitutes for cocaine have been constructed on the benzoic acid nucleus as esters. A. M. Hjort and J. T. Eagan (*Journ. Pharmac. and Exper. Therap.*, November, 1920) were impressed by the work of Macht on benzyl alcohol and conceived the idea that the anæsthetic property might be associated with alcohols, esters and ethers of the aromatic compounds. They therefore examined the pharmacological action of benzyl-carbinol or β-phenyl-ethylol, a substance freely used in the scent industry under the name of rose oil. The toxicity of this substance proved to be low. Experimenting with white mice, the lethal dose proved to be 41 mgrs. for a mouse weighing between 20 and 30 grammes. A dog weighing 9 kilograms, received an intravenous injection of 1.83 gramme in suspension in physiological saline fluid. At first it showed signs of depression; this was followed by muscular inco-ordination and later by excitement. Recovery ensued in two hours. Applied to the cornea of a rabbit in solution from 1% to 2%, good anæsthesia was noted in one minute. This lasted for periods up to 13 minutes. The action proved to be more intense than that of benzyl alcohol. In weak solution between 0.02% to 0.03% it proved more efficacious than either benzyl alcohol or procaine in producing anæsthesia of the human skin. The authors point out that benzyl-carbinol is more stable than benzyl alcohol. Its solubility suffices for the purposes of local anæsthesia.

(135) The Action of Adrenalin and Morphine on the Heart.

Researches on the action of adrenalin on the heart reported by W. J. R. Heinekamp (*Journ. Pharmac. and Exper. Therap.*, December, 1919) show that adrenalin exerts a direct action on the medullary centres. It is further demonstrated that this action is synergistic with the action of morphine. In a series of animal experiments conducted on dogs, intravenous injection of adrenalin was found to cause vagus inhibition in 82% of cases in which there had been previous administration of morphine. The increased inhibition produced by adrenalin following the use of morphine might be due to either of two factors: (*i.*) sensitization of the medullary centre by the morphine or (*ii.*) synergistic or additive action of adrenalin and morphine. It has been shown that morphine definitely sensitizes the vagus centre at the same time causing depression of the respiratory centre. The quantities of morphine used in the experiments described were not sufficient to produce any signs of vagus inhibition. The solutions of adrenalin used were so dilute that the effects of constriction of the cerebral vessels may be disregarded, since the blood carries sufficient surplus oxygen to compensate for the deficiency in volume that would occur with constriction. From a careful study of the experiments performed it is concluded that the aggravated adrenalin action following morphine is due to the morphine sensitization and adrenal-morphine synergism. The increased blood pressure following adrenalin injection plays but little part in effecting the inhibition of the heart.

(136) Emetine-Bismuth-Iodide for Entamœba Carriers.

Emetine-bismuth-iodide administered by mouth has been found effective in curing a large percentage of carriers of amœbic dysentery. In a series of 104 cases recently recorded by Lillie and Shepheard (*Journ. Royal Army Med. Corps*, December, 1917), 95% of cases are reported as cured. Salol-coated pills and keratin-coated tabloids were employed in these investigations and appeared to be effective in rendering carriers free from infection whether primary treatment by hypodermic injections of emetine hydrochloride had been employed or not. A case was regarded as cured after not less than five negative examinations over a period of not less than five weeks after the end of treatment. Salol-coated pills were found to give better curative results than keratin-coated tabloids and to be less liable to cause vomiting and loss of weight. The drug is also conveniently administered in the form of loose power in cachets in doses of three grains daily. At least 2 grammes should be given in all. Symptoms of irritable heart are reduced in a large number of patients who have been cured of the amœbic infection.

(137) Paradichlor-benzene and Paradibrom-benzene.

Paradichlor-benzene occurs as colourless crystals, melting at 53° C. and boiling at 172° C.. It is nearly insoluble in water, but is soluble in benzene, alcohol, ether and carbon tetrachloride. Paradibrom-benzene is also a crystalling substance. It boils at 89.3° C. and is soluble in alcohol to the extent of 14%. Both are relatively inert substances. T. Sollmann (*Journ. Pharmac. and Exper. Therap.*, November, 1920) finds that earthworms placed for 24 hours in a solution of paradichlor-benzene of from 0.001% to 0.009%, do not survive. The bromine compound is almost as efficient an anthelmintic. A series of experiments was carried out with dogs, but with unsatisfactory results. The lethal effect on worms suggests to the author that these substances might prove of value on human infestations. As far as his investigations have led him, he finds them harmless, even in large doses. The bromine compound is less objectionable to take than the chlorine compound. From a single experiment, it would appear that the absorption of the drugs is very slight.

(138) Carvacrol.

T. Solimann in his search for potent anthelmintics has worked with a substance called carvacrol, an isomer of thymol (*Journ. Pharmac. and Exper. Therap.*, November, 1920). It is said to be an active germical agent. It is cheaper than thymol, when produced from spruce turpentine by McKee's process. It is almost insoluble in water, but is readily suspended in it, in normal saline solution or in solutions of bicarbonate of soda. Carvacrol is more actively precipitant to proteins than chenopodium oil. than phenol, than chloroform or than thymol. It is therefore presumably more irritant than these substances. It is a very active hæmolytic agent. In a concentration of 1: 100,000 it is fatal to earthworms. It is thus approximately as potent an anthelmintic as thymol or oil of chenopodium. The tests carried out with dogs were inconclusive, but the author points out that similar results are obtained with efficient anthelmintics. Dogs tolerate the drug in doses up to 0.5 c.cm. per kilogram body weight. Smaller doses, however, produced marked congestion of the small intestines, kidneys and liver. He therefore suggests that it should be used with caution. It would seem that this drug might be of value in hookworm infestation.

(139) Benzyl Alcohol as an Anæsthetic.

T. Sollmann (*Journ. Pharm. and Exper. Therapeutics*, July, 1919) has tested the efficiency of benzyl alcohol as an anæsthetic to mucous membranes. He has compared the action on the foot of the frog and the cornea of the rabbit with that of alypin, cocaine, tropacocaine and procaine. He finds that benzyl alcohol must be used in twice the concentration to have the same anæsthetic effect as cocaine. The author concludes that benzyl alcohol occupies a high position as an anæsthetic among synthetic products. Some observations have been made on man in respect to the action on the gums, tongue, nostrils and intact skin. A pledget of cotton saturated with the solution has been placed between the gums and the teeth. Anæsthesia is produced rapidly, within one minute, if at all. Sensation returns quickly when the pledget is removed and appears to be normal in three minutes. To determine the effect on the tongue, 5 c.cm. solution have been held in the mouth for one minute and for ten minutes. A prickly sensation is produced and a slight degree of anæsthesia. There is a flow of saliva and a feeling of roughness later. Sensations of taste remain. In the nostrils anæsthesia is only produced by concentrated solutions. On the intact skin there is a dulling of sensibility. The author concludes that benzyl alcohol is a fairly efficient anæsthetic for intact mucous membranes, greatly surpassing procaine. It ranks with alypin and beta-eucaine and is somewhat weaker than cocaine and holocaine. Its action is less lasting than that of cocaine.

UROLOGY.

(140) Prostatectomy.

John B. Deaver (*Americ. Journ. Med. Sciences*, January, 1920) states that the mortality rate of prostatectomy is in direct ratio to three vitally important factors. (*i.*) The recognition of absolute contra-indications to operation. (*ii.*) The recognition of relative contra-indications to operation. (*iii.*) The knowledge of methods of treatment preliminary to operation that will remove such relative contra-indications and bring the patient within the operable class. The absolute contra-indications generally affect groups of organs rather than a single organ, although especial attention is often directed to one or other organ or system. With a cardio-vascular system that does not respond to treatment, sepsis and toxæmia are the most frequent contra-indications to operation. Renal failure is the most common contra-indication to operation, but is usually a relative one. Surgical success depends on the ability of the surgeon to estimate the degree of renal impairment and to select and institute methods of treatment best suited to restore this function. The means of estimating renal functions are the tests of retention, of which the most valuable is the blood urea test and the tests of excretion, the most valuable of which is the phenolphthalien tests, though the quantity of urine and its specific gravity should not be neglected. It is a mistake to pass an opinion on a single test, though a single retention test is more reliable than a single test of excretion. The quantity of urea is of little prognostic value unless compared with the blood urea. Acidosis is a factor to be reckoned with. Cultures from the urine were made in all cases, as a guide to pre-operative treatment. Sensitized vaccines were occasionally used to help in overcoming infection, especially where pyelitis was present. Practically all patients were subjected to cystoscopy, after preliminary bowel treatment and a course of formin and acid sodium phosphate and copious drinking of water. In early cases, *i.e.*, patients with small amounts of residual urine, patients whose kidneys are functioning satisfactorily and in whom there are no definite contra-indications to operation, the prostate is removed without preliminary drainage. In the majority of cases the catheter is used either intermittently or constantly. If the kidney function and general condition improve sufficiently, prostatectomy is proceeded with. In the remaining group of cases, which include all those in whom the preliminary catheter treatment has failed, the two stage operation is advocated. Preliminary drainage of the bladder suprapubically limits the size of the prostatectomy incision to the space between the pubis and the drainage opening, on account of the danger of opening the peritoneum, which becomes attached to the bladder in the line of the original incision. This gives insufficient exposure to the prostatic bed. In the event of hæmorrhage it makes it difficult to apply gauze packing, the only certain way to control hæmorrhage after prostatectomy. Preliminary drainage, however, relieves prostatic congestion. Though this makes the enucleation more difficult, it also diminishes the risk of post-operative hæmorrhage. The success of prostatectomy is chiefly dependent on preliminary treatment; of secondary importance are the technical details with which the enucleation is accomplished.

(141) Renal Tuberculosis.

W. F. Braasch discusses the prognosis of renal tuberculosis from the surgeon's point of view (*Americ. Journ. Med. Sciences*, January, 1920). According to the surgical records of the Mayo Clinic, 532 persons were operated upon for renal tuberculosis from January 1, 1894, to January 1, 1918. During this period about 85,000 patients were operated on; the incidence of surgical renal tuberculosis was therefore about 0.6%. From the available statistics he concludes that renal tuberculosis occurs most frequently between the ages of 20 and 40 (70%). It occurs in the male almost twice as frequently as in the female. The post-operative mortality in the male is somewhat higher than in the female. The condition is usually not surgical in children, but is a part of a general tuberculosis. Evidence of tuberculosis in other tissues of the body may be found in fully 71% of the patients, if not in all. The post-operative mortality among patients with coincident lesions is not higher than that of the general average. Multiple lesions, unless part of generalized tuberculosis, do not necessarily render the prognosis more unfavourable. Evidence of healed pulmonary tuberculosis is present in fully one-third of the patients. The percentage of recovery among patients with healed pulmonary tuberculosis is above the average and may be considered indicative of increased powers of resistance. Coincident active pulmonary tuberculosis was found in approximately 5% of the patients, of whom more than 60% recovered after nephrectomy. Involvement of genitalia is present in at least 73% of male patients and does not seem to effect the ultimate recovery. Frequency of spontaneous healing of lesions in the prostate and seminal vesicles contra-indicates their removal by subsequent operation. Evidence of tuberculosis involving the bones and joints was noted in 6% of the cases; one-half of the lesions were active. The late mortality was 5%, from which it may be inferred that the presence of such complications may be an index of increased resistance. Spondylitis, usually healed, was present in 5.7%, with a mortality of 12%. Chronic spondylitis does not influence the prognosis. Active spondylitis, although it does not contra-indicate nephrectomy, will not offer a favourable prognosis. Tuberculous adenitis was present in 19 patients (6.4%) and the low mortality (10%) is suggestive of a heightened resistance. Reduction in hæmoglobin does not necessarily affect the prognosis. The mortality among patients with marked bladder involvement is dependent not so much on the duration of symptoms as on the virulence of the infection. The mortality percentage is markedly influenced by the degree of pathological involvement of the kidney, increasing in proportion to the extent of the lesion. Early lesions have the lowest mortality and pyonephrosis the highest. Occluded renal tuberculosis is indicative of relative immunity and a low mortality. The duration of pre-operative symptoms does not materially affect the late mortality. Recovery from bladder symptoms is apt to occur more frequently and earlier, when the pre-operative symptoms are of short than when they are of long duration. Recovery or permanent improvement of the remaining kidney will not follow after one kidney has been removed in cases of bilateral renal tuberculosis. Operation in cases of bilateral renal tuberculosis is advisable only when there are acute unilateral complications; in these cases there is no hope of eventual recovery. Late mortality is much the highest during the first year; it decreases with the length of time elapsing after operation. The operative mortality is a negligible factor; the late mortality (five years or less after operation) is approximately 20%: failure to effect complete cure is approximately 20%. This leaves a prognosis of recovery in 80% and of a complete cure to be expected in fully 60% of patients.

(142) A Large Vesical Calculus.

T. F. Laurie reports the case of a Syrian serving in the United States Army, who died after an operation for the removal of a large vesical calculus which had led to a double pyonephrosis (*Urol, and Cutan. Review*, October, 1919). The patient had had bladder trouble for about two years. The symptoms were recurrent attacks of painful and frequent urination. His appendix had been removed three years before. On examination, he succeeded with considerable difficulty in passing about 7 c.cm. of very cloudy, offensive urine, having the appearance of thin pus. A hard, rounded mass, about the size of an orange, was felt above the pubes. The prostate was not enlarged and the mass could be felt *per rectum* beyond the prostate. On cystoscopic examination it was seen that the mass was a large calculus, whose size could not be determined. It was removed by operation and was found to weigh 255 grms.. It measured 10 cm. in length, 6.25 cm. in width and 5 cm. in thickness. The bladder was drained through the incision and was subsequently irrigated. The patient, however, failed to make progress and died about three weeks after the operation. At the autopsy the right ureter was found to be kinked or strictured, there was a calculus in the pelvis of the right kidney, associated with infection, while the left kidney was extensively involved and much of its tissue destroyed.

British Medical Association News.

SCIENTIFIC.

A meeting of the South Australian Branch was held in the Lister Hall, Hindmarsh Square, Adelaide, on February 26, 1920, Dr. H. S. Newland, the President, in the chair.

Dr. T. G. Wilson exhibited a parovarian cyst containing 7.75 litres of fluid, which he had removed from a girl aged 14 years. He pointed out that the cyst was purely parovarian and that its interest lay in its size and in the age of the patient. The cyst was so flaccid that difficulty was experienced in determining whether it was a cyst or free fluid in the abdominal cavity. It has been growing for at least one year.

Dr. H. A. Powell showed three cases of repair of skull lesions by osteo-periosteal grafts. The operations had been carried out within the past two months at the Australian General Hospital at Keswick. In each case there was an extensive loss of bone with adhesions between the skull and the membranes covering the brain.

Dr. F. S. Hone, the Local Secretary of the Australasian Medical Congress, Brisbane, 1920, reminded the members that it was difficult to obtain accommodation in Brisbane for the Congress in August. He asked those who wished to reserve rooms to communicate with him as soon as possible.

Dr. J. B. McAree read a paper entitled "Applied Psychology and Suggestive Therapeutics" (see page 355). He gave a practical demonstration of the induction of hypnosis.

Dr. M. H. Downey thought that Dr. McAree's interesting paper showed the great importance of suggestive therapeutics. The sub-conscious mind was the guardian of the person's functions. By suggestion they could make it devote its powerful influence on the welfare of the body. Babinsky had insisted strongly that the majority of hysterical manifestations were produced by suggestion on the part of the medical practitioner. This was true of certain conditions and Dr. Downey held that it was bad practice to put leading questions to a patient, when probing for symptoms. The wounds of men in the recent war illustrated how functional symptoms could be added to purely organic lesions and how they could be eliminated by counter suggestion. He did not use hypnotism in the treatment of the insane, but suggestive treatment was used with steady persistence and with encouraging results.

Dr. H. K. Fry congratulated Dr. McAree on the collection of facts contained in his paper. He remarked on the increased recognition which was being given to the influence of the central nervous system on the tissues of the body. Gaskell had emphasized the integrity of the nervous and of the general somatic tissue cells and the supremacy of the former on the process of evolution. From observations of the phenomenon of emotion and suggestion in man, it appeared to be justifiable to postulate that the activity of the central nervous system associated with unconscious mental processes could influence any tissue receiving a nerve supply and could produce further secondary effects through the nervous control of the internal secretions. For this reason he attached importance to hypnotism, which gave the most direct access to the sub-conscious mind.

The rôle of suggestion in the production of disabilities in military patients was exemplified by the paralysis the man who had been buried by a shell explosion and who had found himself unable to move in the first dim return of consciousness, in the paralysis not uncommonly found to persist after regeneration of a divided nerve and in the protective spasm remaining after a lesion had been healed.

Dr. A. A. Lendon mentioned that a year or two before he had given an address on this subject at the Adelaide Medical Students' Society. He gave details of a few cases in which he had employed a hypnotist for therapeutical purposes with good results. He had had to proceed warily, because he had found so much prejudice against its employment.

Dr. Gilbert Brown related a case of a woman whom he had seen in England in 1908. She was suffering from increasing constipation. Aperients had been unsuccessful and evacuation of the bowels had only been obtained by means of enemata. A laparotomy had been performed and the appendix removed, but the patient returned home unbenefited. At a later date she was admitted to another hospital, where aperients were again given. The only result was that acute salivation set in from large doses of calomel being taken. The patient was transferred to a medical ward and many drugs were given. Among them was elaterinum, one of the most powerful hydrogogue purgatives in the pharmacopœia. Notwithstanding these drugs, enemata were still required. Dr. Betts Taplin was asked to see the patient. A few hypnotic treatments were given and the suggestion was made that the bowels would act easily, without medicine, at half past eight every morning. This result was obtained and continued when the patient returned to her home and for six months during which observation was continued.

Dr. C. T. C. de Crespigny thanked Dr. McAree for his paper, which revealed a great amount of work undertaken in a scientific and intelligent manner. Every medical practitioner had to employ suggestion to a greater or less extent. He gave instances of the use to which he had put suggestion in his own practice.

Dr. F. S. Hone said that they were all indebted to Dr. McAree for putting before them in a practical way the subject of hypnotic suggestion. He had always had a reluctance to go far into the matter himself, although he recognized the great value of suggestion. He thought that many practitioners would use it more frequently if they could employ suggestion without inducing the hypnotic state. They should be very careful to avoid the unconscious use of wrong suggestion. He gave some instances of harmful suggestion in the pre- and post-anæsthetic states.

Dr. H. S. Newland thanked Dr. McAree in the name of the members for his interesting paper. He related instances of the power of suggestion in surgical cases in war work.

In his reply Dr. McAree thanked the members for the attention they had evinced and the speakers for their favourable criticism, which showed how quickly and thoroughly they had assimilated what he had to say. The majority appeared to hold that functional diseases were the only field for psychotherapy. He was sure that it had a wider horizon. A few nights before he had removed instantaneously the pain from a carious tooth, which was causing insomnia. He put the man into a deep sleep, from which he awakened on the following morning free from pain. Local remedies had given no relief. In this case there was a definite, physical basis for the pain. In hemiplegia following cerebral hæmorrhage much more rapid and more extensive improvement occurred if the condition were treated by psycho-therapy. The practitioner frequently felt that he could not alter the course of the paralysis. This despondency was conveyed to the patient either directly or indirectly, while the patient was kept strictly in bed. Early passive and active movements should be encouraged and the patient should be allowed to get out of bed. Suggestion should be given of ultimate recovery in the so-called waking, and, if necessary, in the sleeping stage of hypnosis. Dr. McAree stated that hypnosis in its broadest sense meant an increased state of suggestibility. He was convinced that those who practised what was known as persuasion, really hypnotized their patients in the waking state. The explanation was that by encouraging the brain to act, powerful impulses went by other paths which were undestroyed, but would otherwise remain latent. There was also histological evidence that new paths could be opened up under psychic efforts. On the other hand, the pessimistic practitioner tended to diminish or to paralyse the psychic energy of his patient and so delayed or even prevented recovery. He had carried out many other experiments on multiple personality, or resurrection of childhood memories, and even on the recalling of infantile memories. He would have liked to have spoken on the sub-conscious mind in relation to the moral sense, but the time at his disposal was too short. It was interesting that in dreams the hallucinations were usually visual and auditory, while in hypnosis hallucinations of taste and smell were easier to produce.

A meeting of the Queensland Branch was held at the B.M.A. Rooms, Adelaide Street, Brisbane, on March 5, 1920, Sir David Hardie, the President, in the chair (see *The Medical Journal of Australia*, April 10, 1920, page 349).

Dr. R. Graham Brown and Dr. Ellen Kent Hughes read a paper on tonsillectomy as a means of treatment of diphtheria carriers. (see page 361).

Dr. W. F. Taylor congratulated Dr. Brown on his paper. He considered the question of carriers, both adults and children, to be very important. They should be isolated as far as was possible. Local applications were occasionally useful. He advocated the use of powdered alum, glycerine and alum, or perchloride of iron with chlorine. Excision of the tonsils was frequently required. In many cases in which tonsillectomy had previously been performed, there was a swollen condition of the mucous membrane of the nasopharynx, which afforded a good nidus for bacterial growth. In these cases he preferred to curette freely with the ring knife, then to use his finger nail and finally to wipe the surface with gauze.

Dr. R. A. Macleod disagreed with Dr. Brown regarding the need for tonsillectomy in all cases. He did not consider that there was sufficient evidence that all carriers did harm. The tonsil was a defensive agent for the body against bacteria and it should not be removed without very good reason. Tonsillectomy was carried to extremes by enthusiasts.

Dr. Ainslie Clowes thought that the tonsils were not the only sources of infection. In some cases the accessory nasal sinuses, especially the antra, were the seat of infection. In these cases the tonsils were usually small and should be left alone.

Dr. R. Graham Butler, D.S.O., said that he was glad that both Dr. Willis's and Dr. Brown's papers tended in the direction of limiting the number of cases of infection and so of preventing the spread. He referred to the experience in the Army with meningitis carriers. From this it would appear that a person could harbour bacteria, but if the carriers were below a certain percentage, no harm resulted. He considered that the question of dealing with carriers was important. He advocated stringent measures to remove the cause, even if the procedure were elaborate. Apparently it would be necessary to hand the patients over to specialists in the future, but he trusted that they would evolve a simple technique for the general practitioner.

Sir David Hardie did not consider that tonsillectomy was necessary in all cases of carriers. It would be difficult to prove that carriers did harm to the general public. They did not know to what extent the tonsils acted as protectors of the body; it would therefore be foolish to remove them in a wholesale manner.

Dr. Graham Brown said that he did not advocate tonsillectomy in every case. Local applications had only a limited scope, as they could not reach the bottom of the tortuous crypts seen in many tonsils. Antitoxin was a failure. He did not consider it worth while to preserve diseased tonsils. The accessary sinuses had not been excluded as a possible source of infection. Enucleation of the tonsil needed an expert.

The undermentioned have been nominated for election as members of the New South Wales Branch:—

Victor R. Wilson, Esq., M.B., Ch.M., 1920 (Univ. Sydney), c/o. St. George District Hospital, Kogarah.

Theodore W. Van Epen, Esq., M.B., 1913 (Univ. Sydney), Casino.

Eric Meikle, Esq., M.B., Ch.M., 1918 (Univ. Sydney), Ingham, Queensland.

Medical Societies.

MELBOURNE HOSPITAL CLINICAL SOCIETY.

The monthly meetings of the Melbourne Hospital Clinical Society were resumed on March 26, 1920. Dr. John Gordon presided and the attendance was moderate.

The first cases presented were those of Mr. W. Kent Hughes; they comprised four examples of rodent ulcer treated by diathermy. The first, of four years' standing when treatment was applied, was originally the size of one shilling; four months after one application of diathermy the only evidence of the original lesion was a smooth scar.

The second, of six years' duration, responded equally well to the treatment. A third, which had been in existence for ten years, was large and exuberant and about half the size of a walnut when diathermic treatment was instituted; one application had been employed and as yet there had been no recurrence after the lapse of four months. The fourth instance was that of a much further advanced condition, with deep destruction of the cartilage of the nose and extensive spread over the cheek, dating back fifteen years. Eight applications had been necessary and a small recurrence in one spot was apparent, but, nevertheless, Mr. Kent Hughes expressed himself as very hopeful of this case.

Mr. Kent Hughes stated that the early cases invariably healed in from one week to one month after the diathermic cautery. He thought that diathermy had a distinct advantage over radium in cases of rodent ulceration involving bone and cartilage.

Mr. F. H. Langlands brought forward a man, upon whom he had operated in October, 1916, for a badly damaged musculo-spiral nerve and consequent complete wrist-drop.

At the operation he had found at least 7.5 cm. of damaged nerve, which he had removed. The microscopical examination revealed that it consisted of fibrous tissue only. He therefore performed the operation of tendon transplantation, placing the tendon of the *flexor carpi radialis* into the extensor tendons on the dorsum of the hand. Eight weeks after the operation the patient was capable of some extension of the wrist and fingers, a period at which, Mr. Langlands remarked, there could have been no nerve regeneration.

Before the end of 1916 this man was engaged in dispensing; in the earlier part of 1917 he fulfilled the duties of a stretcher-bearer and in the middle of that year was detailed to load ammunition. The man's movements and power in his wrist and fingers were good; the condition would suggest that the musculo-spiral nerve had regenerated, but, if so, he (Mr. Landlands) was completely at a loss to understand it, as he had removed the 7.5 cm. of apparently hopelessly damaged nerve that he had described.

Mr. Alan Newton, after examining the patient's sensation, expressed the opinion that the nerve had regenerated; it seemed to be peculiar to the musculo-spiral nerve that it lent itself to regeneration to a much greater degree than any other nerve.

Mr. W. Kent Hughes agreed with Mr. Newton as to the comparative ease of regeneration in the musculo-spiral nerve. The procedure of bringing the divided ends to the inner side of the arm, thus making the musculo-spiral an internal rather than an external nerve, was very useful where there was a large gap to be bridged; 1.5 to 2 cm. might thereby be gained.

Mr. Langlands next asked the attention of the meeting to a case in which he had been obliged to remove 3.75 cm. of the external popliteal nerve, on account of severe injury, leading to complete foot-drop. He had experienced great difficulty in getting the separated ends of the nerve together and had adopted the expedient of wrapping the junction round with calf's pericardium as a measure directed against implication of the nerve in scar tissue. This patient had been wounded at Peronne in 1917; the operation he had outlined had been performed in March, 1919. Movements of the foot returned in four months and the only existing defect was that the *extensor proprius hallucis* was not acting well, as evidenced by some dropping of the great toe.

Mr. Alan Newton congratulated Mr. Langlands on the result achieved in this case. The external popliteal was a difficult nerve with which to attain a good result. He was at a loss to explain why the *extensor proprius hallucis* should be relatively late in recovering its function. Slowness of recovery might be some property inherent in this muscle, or it was possible that the nerve fibres to the *extensor proprius hallucis* regenerated chiefly along sensory paths.

Mr. W. Kent Hughes remarked that although his experience was limited to tenotomies, he had noted that if every extensor muscle in the foot were divided, the *extensor proprius* would always lag behind the others in its recovery. With reference to the "toe-drop," he suggested division of the opposing flexor muscle.

Mr. Basil Kilvington quoted two instances within his experience in which all the extensors recovered except the *extensor proprius hallicis*. One was a case of injury to the external popliteal nerve, with suture; the second was a compound fracture of the femur, with involvement of the popliteal nerve in scar tissue. Otherwise the nerve was not injured and he had found it necessary to do no more than to free the nerve. Some months later all the muscles of the foot had regained their function except the *extensor proprius hallucis*. The delay, or even failure, in recovery of this muscle in so many instances must be more than co-incidence, but he could not offer any explanation.

Mr. Langlands next presented a man, aged 48, who was the subject of considerable pain and disability as the result of a chronic and obscure condition of his left hip. The left foot was very much everted. Mr. Langlands asked members to examine the patient and express opinions regarding the diagnosis and treatment. A skiagram was exhibited which became the subject of much scrutiny and discussion by those present.

Mr. T. E. L. Lambert considered that the diagnosis lay between *osteitis cystica* and *arthritis deformans*, with bony overgrowths. The Murphy operation of arthroplasty might be performed with advantage, but he would favour the less severe procedure of subtrochanteric osteotomy, which would rectify the line of weight.

Mr. Alan Newton favoured the opinion of *arthritis deformans* as against an intracapsular fracture with deformity, which had also suggested itself to him. He would be inclined to try mechanical treatment, including hot air and, if such measures brought no relief, sub-trochanteric osteotomy and division of the adductors might be performed. He thought that the existing spasm of the adductors would militate against the best result from sub-trochanteric osteotomy, unless these muscles were divided.

Dr. L. J. Clendinnen, commenting upon the X-ray picture, said that the "heaping up" extended much further than was usual in *arthritis deformans*; in this instance the skiagram showed heaping up of bone extending down the neck of the femur to the great trochanter, whereas in *arthritis deformans* the bony thickening was generally limited to the head. At first he had been disposed to regard the condition as an impacted fracture, but there was no history of trauma. With Mr. Langlands, he had considered the possibility of myeloid sarcoma, but did not think such a diagnosis was supported by the appearance of the skiagram.

Dr. A. F. Bell suggested that a cystic condition of the bone might have led to spontaneous fracture, with subsequent impaction.

Mr. Langlands, in reply, emphasized the fact that the neck of the bone was expanded more than the head and that the skiagram did not show the "mushrooming" of the head seen in *arthritis deformans*. The first picture looked distinctly cystic, but a later one taken some months afterwards, showed an absence of the cystic condition and generally a solid appearance. In view of these altered appearances during the interval, perhaps it would be well to wait a few months longer and have another photograph taken. He confessed he found the questions of diagnosis and treatment extremely difficult.

Mr. Alan Newton apologized for the absence of his two patients, who had failed to appear at the meeting. However, he asked permission to exhibit the prints of two interesting skiagrams. The first was an excellent picture showing double cervical rib. The point of particular interest was that the patient from whom it was obtained, had not manifested any symptoms or disability. Mr. Newton remarked that this was evidently an instance in which the plexus was pre-fixed; when the plexus was post-fixed symptoms usually occurred, and even the first rib might give rise to symptoms under such circumstances.

The second photograph illustrated an anomaly of the carpus, in that on both sides there were very few carpal bones; those that were present, were limited to the distal row. The patient's hands were apparently normal and the condition was disclosed by a skiagram taken after a fall on the outstretched hands.

Mr. Basil Kilvington introduced for discussion the case of a man, *æt.* 62, upon whom he had operated for a very large pyonephrosis. There had been an indefinite renal history for years. Two months before the general health became much more seriously affected, the patient lapsing into a condition of great weakness, accompanied by loss of weight and appetite. He had complained of the frequent necessity of passing water and also that his urine was very thick. Examination disclosed a large palpable tumour, apparently pyonephrosis, but the amount of pus demonstrable in the urine was not as great as was anticipated. Influenced chiefly by the size of the tumour, Mr. Kilvington had made an incision at the outer border of the left rectus muscle and performed the nephrectomy by the abdominal route. The question upon which he invited discussion, was when the abdominal method of nephrectomy should be chosen in preference to the lumbar operation. In the case he had presented an additional advantage was secured by the abdominal operation, in that an aberrant renal artery at the upper pole of the kidney was readily secured, whereas it would probably have been a source of difficulty had the operation been conducted through a lumbar incision.

Mr. T. E. L. Lambert remarked that the soft parts constituted the principal obstacle in performing nephrectomy through a lumbar incision. He had found that the best approach was obtained by means of a U-shaped incision, commencing at the twelfth rib, carried down to the crest of the ilium and returning along the outer border of the *erector spinæ* muscles. The access to the kidney could be further improved by removal of the last rib, which he effected by means of scissors and by working from the tip inwards, a procedure which involved very little risk of injuring the pleura.

Mr. John Gordon said that he had made use of the abdominal incision in a recent case in which the renal tumour had been very large; in that instance he felt sure that he could not have succeeded by the lumbar route. He favoured the abdominal operation for the removal of large tumours of the kidney.

Mr. Kilvington than proceeded to read the notes of a case of malignant disease of the pylorus. The patient was a woman of 60. She had complained of dyspeptic symptoms for some weeks. The lump found in the upper abdomen was freely movable and the diagnosis of malignant disease was confirmed by the X-ray appearances. He had therefore operated and had removed about one-third of the stomach, which as much of the duodenum as he could get. After consideration, he decided to join the cut ends of the stomach and duodenum, instead of closing both and performing gastro-enterostomy. He could see two objections to the former procedure: one, the imperfect peritoneal covering of the duodenum and the other, the disparity in size between the two ends to be united. For these reasons he had thought it wise to insert a drainage tube; as events transpired, it was fortunate that he did so. However, the patient had done very well and Mr. Kilvington requested some opinions regarding the best method of restoring the continuity of the gut after partial gastrectomy. Certainly in gastro-enterostomy the advantages of a complete peritoneal investment and lack of tension were secured.

Mr. Victor Hurley mentioned that a procedure at present much in favour with English surgeons, was that of direct transplantation of the cut end of the stomach into the jejunum. This method, known as the Polya operation, was being used by both Moynihan and Sherren.

Mr. Lambert considered that the operation indicated by Mr. Hurley was undoubtedly the easiest; he had utilized it in his last four cases of partial gastrectomy.

Dr. W. Ostermeyer brought forward a man who had been sent to the hospital with the provisional diagnosis of hydatid of the liver. There had been some swelling of the abdomen, shortness of breath and diarrhœa for three months; dull pain in the upper abdomen had been present at the onset of the diarrhœa and loss of weight was considerable. The patient was a labourer, formerly heavily addicted to spirits; no history of venereal disease could be obtained. Jaundice, melæna and hæmatemesis were absent, but there had been a small hæmoptysis years before. The specific gravity of the urine was 1,021; it was acid and contained no albumin nor sugar. Physical examination showed dulness extending up to the third right interspace. No eosinophilia was detected in the blood film. Rectal examination disclosed a slightly enlarged prostate. The Wassermann test proved negative. Dr. Ostermeyer demonstrated the greatly enlarged liver, extensive dulness in the chest, ascitic effusion and œdema of the legs.

A second patient exhibited by Dr. Ostermeyer had been an inmate of the hospital with cerebral hæmorrhage and right hemi-paresis in December, 1919. At the time of his discharge in January his blood pressure was 200 mm. Hg.. On his second appearance, the history was given that at noon on the day of admission he had become peculiar, talked wildly and pulled at the bedclothes. By 8.15 p.m. of the same day he was stertorous and unconscious.

The urine had a specific gravity of 1,016 and contained a trace of albumin, but no sugar. Microscopical examination revealed a few leucocytes, occasional granular casts and some oxalate crystals. On spinal puncture, blood-stained fluid under increased pressure was obtained. The Wassermann reaction in both blood and cerebro-spinal fluid was negative. At a second lumbar puncture the cerebro-spinal fluid was found to contain an excess of globulin and a small number of lymphocytes. On the patient's re-admission to hospital, the hemi-paresis present on the first occasion was found to have disappeared to a large extent; the knee jerks were very active and an increased tonus was present in the muscles. One plantar reflex was flexor and the other equivocal.

Dr. Ostermeyer raised the following questions for consideration: Was the patient uræmic? Was it possible that the blood in the cerebro-spinal fluid was not a contamination, but the expression of a hæmorrhage into the ventricles? A meningeal hæmorrhage was suggested by a fit which occurred since the patient's admission on the second occasion.

The proceedings terminated with a demonstration by Dr. S. W. Paterson of a simple method of cross-agglutination by which incompatibility between the blood of the recipient and the prospective donor could be detected for the purposes of blood transfusion.

THE HEALTH OF QUEENSLAND.

The Commissioner of Public Health of Queensland issued a short time ago his report for the year June 30, 1919. Attached to the report are seven appendices amplifying information which Dr. Moore has compressed into less than four pages.

Statistics.

The estimated population of Queensland for the year 1918 was 688,546. This figure shows an increase of 8,234 persons, which is equivalent to 1.21% of the population. The crude birth-rate for the year 1918 was 28.41‰, as compared with 29.05 in 1917. The death-rate was 10.40‰, as compared with 9.63 in 1917. The infantile mortality was 56.9 per 1,000 births, as compared with 54.2 in 1917. These figures are of some significance. They reveal that Queensland, with its small population to-day, is a healthy State, that the birth-rate is relatively high and that the infantile death-rate is relatively very low. In 1901 the population of Queensland was 506,721. In the course of eighteen years the population has thus increased approximately by one-fifth. During the same time the population of the Commonwealth has increased by one-third. The prosperity of Queensland in the future will depend on whether or not steps can be adopted to accelerate the act of increase of population very materially.

Infective Diseases.

Dr. Moore gives the place of honour among the infective diseases to influenza. He records that on his return from the inter-State conference, held in November, 1918, in Melbourne, he issued a circular letter of instructions to local authorities and to specially appointed health officers. In addition, he distributed a leaflet entitled, "Instructions on Pneumonic Influenza," to the public. Regulations were issued from time to time to meet the contingencies as they arose. Persons endeavouring to enter the State were subjected to a period of seven days' quarantine and for this purpose border camps were established. The disease was proclaimed a notifiable disease on January 29, 1919, and the regulations provided for the isolation of infected premises or premises suspected of being infected, for enabling health officers and other medical practitioners to remove persons supposed to be suffering from influenza to an isolation hospital, for house-to-house inspection, for the immediate disposal of dead bodies and for the disinfection of public buildings, etc.. Dr. Moore states that, owing to the difficulty in differentiating in its early stages ordinary influenza from pneumonic influenza, it was decided to require all cases of influenza to be notified from May 21, 1919. Endeavours have been made in many countries during recent pandemics to demonstrate the existence of a particular form of influenza as a disease entity. The daily newspapers, panic mongers among the population and the more impressionable of the people readily adopted terms such as Spanish influenza, *la grippe* and pneumonic influenza. Until the pathology of the disease has been established beyond cavil, it is impossible to speak dogmatically on this subject, but up to the present no evidence has been adduced to justify the assumption that the disease that has covered the whole world is essentially different from ordinary influenza.

Orders were issued for the closure of moving picture theatres and schools in certain districts. The first case was notified on May 3, 1919. Between that date and June 30, 1919, 20,669 cases were notified in the State, including 9,570 in Brisbane and 11,099 in other parts of the State. In regard to the measures adopted to check the spread of the infection, very little information is given. Reference is made to the ready co-operation extended by the local authorities, the shipping companies and other bodies. Dr. Moore records in some detail the steps taken in connexion with the establishment of seven inhalation chambers. In these chambers a 2.5% solution of zinc sulphate was sprayed. It is claimed that, by increasing the number of the jets, so as to make them available for use in open chamber treatment of the nose and throat only, "the liability to chills" was avoided when the outside temperature fell. Dr. Moore claims that no ill-effect had been reported or observed. Apparently, the Department believes in the efficacy of the inhalatorium. There is no record in the report of the number of deaths from influenza.

During the course of the year 1,100 cases of diphtheria were reported in the metropolitan area and 1,296 in the remainder of the State. Dr. Moore states that the small increase in the number of cases notified scarcely warrants any comment. The number of cases notified in the preceding twelve months was 1,908, so that the "small increase," expressed in figures, represents 25.6%. It is stated that a large number of swabbings from patients and contacts were examined bacteriologically for evidence of infection. Out of a total of 18,922 swabbings 3,534 yielded a positive result. Dr. Moore does not indicate the use to which the information thus obtained was put.

The total number of cases of enteric fever notified during the twelve months was 608, as compared with 552 in the preceding twelve months. This represents an increase of 10%. It is stated that the chief means of prevention is prophylactic inoculation. Dr. Moore recommends shearers, sugar and meat workers and travellers to submit to the procedure. Not one word is devoted to measures aiming at the elimination of the cause of the disease. Of the value of protective inoculation there can be no doubt. It should, however, not be used to relieve the responsible authority of the duty of rendering the environment of the inhabitants hygienic. We venture to state that the field work of the Australian Hookworm Campaign will prove itself productive of much more permanent good in reducing the incidence of enteric fever than all the talk in the world about preventive inoculation.

In the course of the twelve months under review, 410 cases of pulmonary tuberculosis were notified, 355 in civilians and 55 in soldiers. In the previous twelve months the number of cases notified was 450. Dr. A. Stewart, the part-time Health Officer, examines persons suffering from this disease. He aims at the admission to the Dalby Sanatorium of persons suffering from tuberculosis in the early stages and refers those whose disease is advanced, to other institutions. Dr. Moore refers to the difficulty of providing suitable lodging for persons with pulmonary tuberculosis earning their living at public places. He advocates the establishment of a hostel for the temporary accommodation of persons awaiting admission to the Sanatorium. The Staff Nurse visits the homes of these persons and gives advice and nursing attention.

During the twelve months the following notifications of venereal diseases were received:—

Disease.	Metropolitan.	Rest of State.	Total.
Gonorrhœa	925	825	1750
Primary Syphilis	94	53	147
Secondary Syphilis	58	17	75
Soft Chancre	10	18	28
Ulcerative Granuloma	0	3	3

In the same period 411 certificates of cure were received. The total number of persons who "attended and re-attended" the Enthetic Diseases Clinic was 3,965, including 3,680 males and 285 females. It is not clear from the wording whether

these figures correspond to the number of infections or to the number of individuals. It is further stated that 637 women were subjected to examination at the examination rooms. He also records that 88 women were admitted to the No. 12 Ward for detention "until no longer infectious." The following paragraph is included in the report:—

> It is regretted that, owing to the influenza and other existing conditions, the necessary clinics could not have been opened during the past year, but when matters again become normal these will be available in the metropolitan area, whilst those at the principal centres will be provided as soon as circumstances permit.

It will be noted that influenza was prevalent from May 3 until the end of June. Dr. Moore does not enumerate the other conditions which interfered with the administration of this chapter of preventive work. Both he and Dr. F. P. Crowe, the Medical Officer of the Enthetic Diseases Department, urge the Government to make fuller provision for the institutional treatment of these diseases.

Hookworm Campaign.

A short account is appended of the work of the Australian Hookworm Campaign, from July 1, 1918, to June 30, 1919. During this period Dr. G. H. Waite was compelled to resign, owing to ill-health, and the work was entrusted to Dr. S. M. Lambert. Before he resigned, Dr. Waite propounded a scheme for an extension of the campaign. The total cost will amount to £100,000 and will be borne, in part, by the Federal Government, in part by the Queensland Government and in part by the Rockefeller Foundation.

Laboratory of Microbiology and Pathology.

In December, 1918, Dr. Burton Bradley resigned the position of Director of the Laboratory of Microbiology and Pathology and was succeeded by Dr. A. W. Dean. No information of practical importance is published concerning the work carried out during the year.

Leper Lazaret, Peel Island.

On the first day of the period covered by the report there were 46 lepers in the lazaret. Twenty of these patients were of European descent and 26 were coloured. During the period of the following twelve months six patients were admitted, including one coloured person. The number of deaths was eight, six being of coloured persons. There escaped from the lazaret three patients, of whom two were coloured. At the end of the year there were 22 white and 19 coloured patients under control. The leprosy was tubercular in five, nodular in thirteen, mixed in nineteen and anæsthetic in four.

Food Analysis.

Mr. J. B. Henderson, the Government Analyst, publishes an appendix containing information concerning the chemical analyses carried out during the year. Of 734 samples of foods and drugs, 201 were found to be below standard. As is usual, milk was examined much more frequently than other foods. In 23 instances the sample of milk was found to be below standard. As is usual, milk was examined much more frequently than other foods. In 23 instances the sample of milk was found to be unfit for analysis. In spite of this fact and of the further fact that of 265 samples taken by the inspectors for legal purposes 75 were found to be below standard, only 18 prosecutions were instituted. The fines and costs amounted to a little over £10 per offender. It is stated that the average addition of water represented 15.6%, as compared with 14.5% in the previous year. The percentage of samples below standard was extremely high. It is stated that, since the samples were taken about the middle of the drought period, the majority of the failures were due to want of stripping. The Department took a lenient view and did not prosecute in those cases in which the shortage of fat was not great.

Nurses' Registration.

Dr. H. Byam Ellerton, as Chairmen of the Nurses' Registration Board, issues a report for the year. The other members of the Board are Dr. A. C. F. Halford, Dr. F. W. T. Page, Miss Chatfield and Miss Bourne. Registration was granted after examination to 90 nurses for general work, to three for obstetric nursing and to eleven for mental nursing. In addition, 16 nurses were registered as general nurses, 19 as midwifery nurses and six as mental nurses under Section 206 of the Health Act, which gives the Minister discretion to dispense with certificates of examination or other conditions in favour of any person who for three years immediately preceding the first day of January, 1912, had been employed in the calling of a nurse. Two examinations are held each year and during the course of the twelve months covered by the report a special examination was held at Toowoomba, to enable a general nurse to obtain a qualifying certificate required by the military authorities. There are 44 general hospitals recognized as training schools, five hospitals as training schools for midwifery and three as training schools for mental nursing.

General Sanitation.

The Chief Sanitary Inspector, Mr. John Simpson, publishes a summary of the work carried out in his Department. During the influenza epidemic 17 temporary sanitary inspectors were employed in addition to the ordinary staff. Areas were assigned to each officer and a systematic house-to-house inspection was carried out. The work of the temporary inspectors was supervised in the early stages. The total number of inspections and re-inspections was 7,305. Complaints in writing were received 207 times and 448 notices were served on local authorities. In the metropolitan area a high-power garbage destructor was installed.

The sewage scheme in Brisbane and the suburbs was being carried into effect. Plans were prepared for the construction of schemes of storm water drainage, to minimize existing defects. Many complaints were received regarding the objectionable smell arising from polluted streams. In some streams considerable quantities of trade wastes are discharged, in addition to sewage. The inspector depicts the horrors associated with this double form of pollution and points out that as long as divided authority plays a part, the Department will be handicapped in endeavouring to deal with the menace. The work of rat destruction continues and the Department exercises vigilance in regard to the possible introduction of plague.

It appears that the sanitary inspectors are required to supervise the swabbing of throats in certain schools in connexion with outbreaks of diphtheria. The tendency to utilize the services of expert sanitary inspectors for bacteriological work in which they are obviously untrained is becoming too general. The results of bacteriological investigations are necessarily unreliable when a person untrained in laboratory technique endeavours to carry them out. There is also another difficulty of importance. The public, finding that the Department of Public Health entrusts the difficult task of investigating the source and cause of epidemic disease to their sanitary inspectors, gains the impression that a sanitary inspector is an expert epidemiologist and is competent to safeguard the health of the community.

The report from the Central District is brief. After the disastrous floods of 1918 the greater part of the sanitary plant at Rockhampton had to be removed, as well as the old sanitary outfit at North Rockhampton. The Inspector refers to a combined service from which he anticipates satisfactory working. On sixteen houses condemned as a result of inspection, four had already been demolished.

It is reported that the Council of Townsville has taken over the sanitary service, with beneficial results. Many sanitary defects had been remedied. In Cairns much progress had been effected as a result of the activity of Dr. Lambert, the Director of the Australian Hookworm Campaign. In Mackay the Russell system for the treatment of night-soil was being installed. It is stated that the street water channels had been allowed to get into a deplorable condition. These channels had become excellent breeding-grounds for mosquitoes.

The Chief Food Inspector, Mr. H. W. Petherick, gives a full account of the activities of his Department, chiefly in regard to the examination of milk, alcoholic liquors and foodstuffs, the prosecution in cases of adulteration of foods, etc., and the endeavour to sell foods unfit for human consumption. He also refers to the steps that had been taken in regard to the introduction of regulations issued under the *Sale and Use of Poisons Act, 1891*. A draft was prepared and was submitted to the Queensland Branch of the British

Medical Association and to the Queensland Pharmaceutical Society. The regulations, after some modification, were adopted and gazetted.

Correspondence.

THE "CURE" OF GONORRHŒA AND THE VENEREAL DISEASE ACT.

Sir: I observe that under the *Venereal Disease Act*, which is shortly to come into force in New South Wales, the medical attendant is required to give a certificate of "cure."

This appears to me to be a serious matter inasmuch as no medical man can under any circumstances be sure that any patient who has had gonorrhœa, has become free from the disease.

Neisser declared his scepticism as to the cure of any patient of either sex who had once become infected. This is perhaps going too far, but it is quite certain that we have no criteria whatever whereby we can declare any patient to be free from infection.

I believe that the test to be applied is that two successive smears shall show the absence of the gonococcus. In the case of the male this test is ridiculous and in the case of the female it is preposterous. The gonococcus may be absent from ten successive smears and yet the organism may be present in the patient and liable to cause infection to others. It is a well-known fact that gonococci may be present in the threads found in the urine of males, even when they have no discharge at all. In the case of the female the test has even less value. The serious aspect of this matter is that the medical man is asked to give a certificate of "cure" to persons of whom he must know that a large number are still infectious.

If one of these "cured" persons marries and infects an innocent woman with this devastating disease, then surely the medical man who gave him a certificate, will incur a grave responsibility.

Legally, of course, he can shelter himself behind the "two smear" fiction, but whether morally he has the right to do so is another matter. If the law prescribes a test which he knows to be utterly inadequate, is it right for him to prostitute his professional name by signing what is really a false declaration?

If we sign these papers, the country will be full of these "legally cured" sources of infection. Their gonococci may have no *locus standi* and in fact may be legally dead, but I fear that excommunication of this kind will do little to induce them to mend the evil of their ways.

There are other objectionable features in the Act and I think that it would be an admirable thing if a general meeting of the Association were held to discuss the Act in all its bearings; and it is possible that some of these bearings will surprise the authors of this Act when it comes to be enforced.

If the Minister for Health could be induced to attend such a meeting, so much the better, for he would hear the views of those having a practical acquaintance with the disease. Obviously the authors of this Act have not come into contact with any such.

Yours, etc.,
ARTHUR S. VALLACK.

233 Macquarie Street, Sydney,
March 31, 1920.

STATISTICS OF THE MEDICAL PROFESSION.

Sir: In the issue of *The Medical Journal of Australia* of March 27, page 293, appears an article dealing with the statistics of the medical profession in the Commonwealth compiled from the various Medical Registers. As the deductions in the case of Victoria are very wide of actual fact, I have been directed by the Council of the Victorian Branch to reply thereto and to present a closer approximation to truth for the benefit of Victorian members particularly and others interested.

You surmise that the number of medical practitioners actually resident within the State is too high. This can easily be shown. Taking letters A to D of the last Register, of the 322 medical practitioners said to be resident in Victoria, 102 are known to reside outside the State and 4 are known to be deceased. Arguing on this basis, of the 1,538 names on the Register said to be of those practitioners resident in Victoria, only 1,031 are so resident. The membership of this Branch is given as 961; thus the ratio of members of the British Medical Association in Victoria to the number of practitioners resident in this State is 93.2%.

In our fight with the friendly societies a formidable weapon pointed at our opponents was a 96% membership; and it was particularly disconcerting to members of the Organization Committee and highly encouraging to the other side to have it authoritatively announced that the percentage was only 62.8%. In like manner corrected figures for graduates of Sydney and Adelaide Universities resident in Victoria are 12 and 9 respectively, not 29 and 20 as given. It is a pity that the published "statistics" will be readily available for all time, whereas the truth will be hidden in obscurity.

A word as to the way the Victorian Register of medical practitioners is kept as a side-line by a government official in the Chief Secretary's Office. It is noted that in New South Wales outside assistance is sought in purging the Register, but we are assured that in Victoria the procedure is hedged about with red tape which the guardian of the Register dare not break. No address can be altered unless the medical practitioner concerned personally requests such alteration; if a death should occur the Registrar of Births, Deaths and Marriages must notify the Registrar of the Medical Board under a £10 penalty before the latter dares put pen to paper. The names of 4 deceased well-known practitioners whose initials in the register range from A to C occur in the first few pages; and we are informed that others are known to the Board.

As Secretary of the Branch I have on more than one occasion offered the Registrar of the Medical Board to keep the addresses in the Register up-to-date, but the offer has as often been declined.

As further showing the utter worthlessness of the Register as a directory, of the 107 names on the pages 1 and 2, 70 have been ascertained not to be at the address named and one is deceased, *i.e.*, 33.5% only of addresses given are correct.

The Council feels so strongly in the matter of the slipshod methods of keeping the Victorian Register that it has forwarded a letter to the Chief Secretary, asking for an admixture of reason with legislation.

Yours, etc.,
C. STANTON CROUCH,
Secretary, Victorian Branch, British Medical Association.

East Melbourne,
April 9, 1920.

"A General Practitioner" has neglected to enclose his card.

Books Received.

AMERICAN IMPRESSIONS, by Hon. H. Y. Braddon, M.L.C.; 1920. Sydney: Angus & Robertson, Ltd.; Crown 8vo., pp. 120. Price, 5s..

HOME EXERCISES FOR SPINAL CURVATURES, by Richard Timberg, M.R.C.S.; Second and Revised Edition; 1920. London: William Heinemann (Medical Books), Ltd.; Crown 8vo., pp. 67. Price, 6s. net.

PRACTICAL PHARMACOLOGY FOR THE USE OF STUDENTS OF MEDICINE, by W. E. Dixon, M.A., M.D., F.R.S.; 1920. Cambridge: Syndics of the Cambridge University Press; Demy 8vo., pp. 88. Price, 7s. 6d. net.

Proceedings of the Australian Medical Boards.

QUEENSLAND.

The undermentioned have been registered, under the provisions of *The Medical Act of 1867*, as duly qualified medical practitioners:—

Crawford, Harold, Chinchilla, M.B., Ch.B., Univ. Melb., 1916.

De Luca, Philip, Brisbane, M.D., Univ. Naples, 1895.

Mahon, Austin L'Estrange, Isisford, M.B., Ch.B., Univ. Melb., 1916.

McDonald, Sydney Fancourt, Brisbane, M.B., Ch.B., Univ. Melb., 1912, M.R.C.P., Lond., 1919.
McDonnell, Stanley Augustine, St. George, M.B., Univ. Syd., 1916.
Robinson, Arthur Thomas Rowlandson, Mackay, M.B., Ch.M., Univ. Syd., 1917.

Medical Appointments.

It is announced that Dr. S. Rabl (B.M.A.) has been appointed a Trustee of the Murtoa Public Cemetery, Victoria, in place of the late Dr. H. Rabl.

Dr. J. C. Shelmerdine (B.M.A.) has been appointed District Medical Officer and Pubic Vaccinator at Meredin, Western Australia.

From the date of entry on duty, Dr. Harvey Sutton, O.B.E. (B.M.A.), has been appointed, for six months on probation, Principal Medical Officer to the Department of Public Instruction of New South Wales.

Dr. Rosamond A. Benham (B.M.A.) has been appointed, for a period of twelve months on probation, Junior Medical Officer to the Hospitals for the Insane, Victoria.

Dr. J. B. Cleland (B.M.A.) has been appointed Director of the South Australian Government Laboratory in the Adelaide Hospital.

The appointment to the Adelaide Hospital of Dr. R. E. Magarey (B.M.A.) and Dr. Henry A. Powell (B.M.A.) as Honorary Assistant Gynæcologists, of Dr. S. R. Burston, C.B.E., D.S.O. (B.M.A.), as Assistant Physician in the Infectious Diseases Block, and of Dr. W. A. Verco (B.M.A.) as Honorary Gynæcologist, is announced in the *South Australian Government Gazette*.

Dr. A. H. Gibson (B.M.A.) has been appointed Deputy Quarantine Officer at Fremantle.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxvii.

Military Forces of the Commonwealth: Area Medical Officers in New South Wales.
Renwick Hospital for Infants, Sydney: Junior Resident Medical Officer.
Hospital for Sick Children, Brisbane: Honorary Surgeon.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges (other than the Grand United Order of Oddfellows and the Melbourne Tramways Mutual Benefit Society), Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30.-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Apr. 17.—Northern Suburbs Med. Assoc. (Sydney).
Apr. 20.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Apr. 21.—W. Aust. Branch, B.M.A..
Apr. 22.—Q. Branch, B.M.A., Council.
Apr. 27.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Apr. 28.—Vic. Branch, B.M.A., Council.
Apr. 29.—S. Aust. Branch, B.M.A..
Apr. 29.—Western Suburbs Med. Assoc. (N.S.W.), Annual.
Apr. 30.—N.S.W. Branch, B.M.A..
May 5.—Vic Branch, B.M.A..
May 7.—Q. Branch, B.M.A..
May 11.—Tas. Branch, B.M.A..
May 11.—N.S.W. Branch, B.M.A., Ethics Committee.
May 13.—Vic. Branch, B.M.A., Council; Election of Representative on Representative Body.
May 13.—Q. Branch, B.M.A., Council.
May 14.—N.S.W. Branch, B.M.A., Clinical.
May 14.—S. Aust. Branch, B.M.A., Council.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: City 2645.)